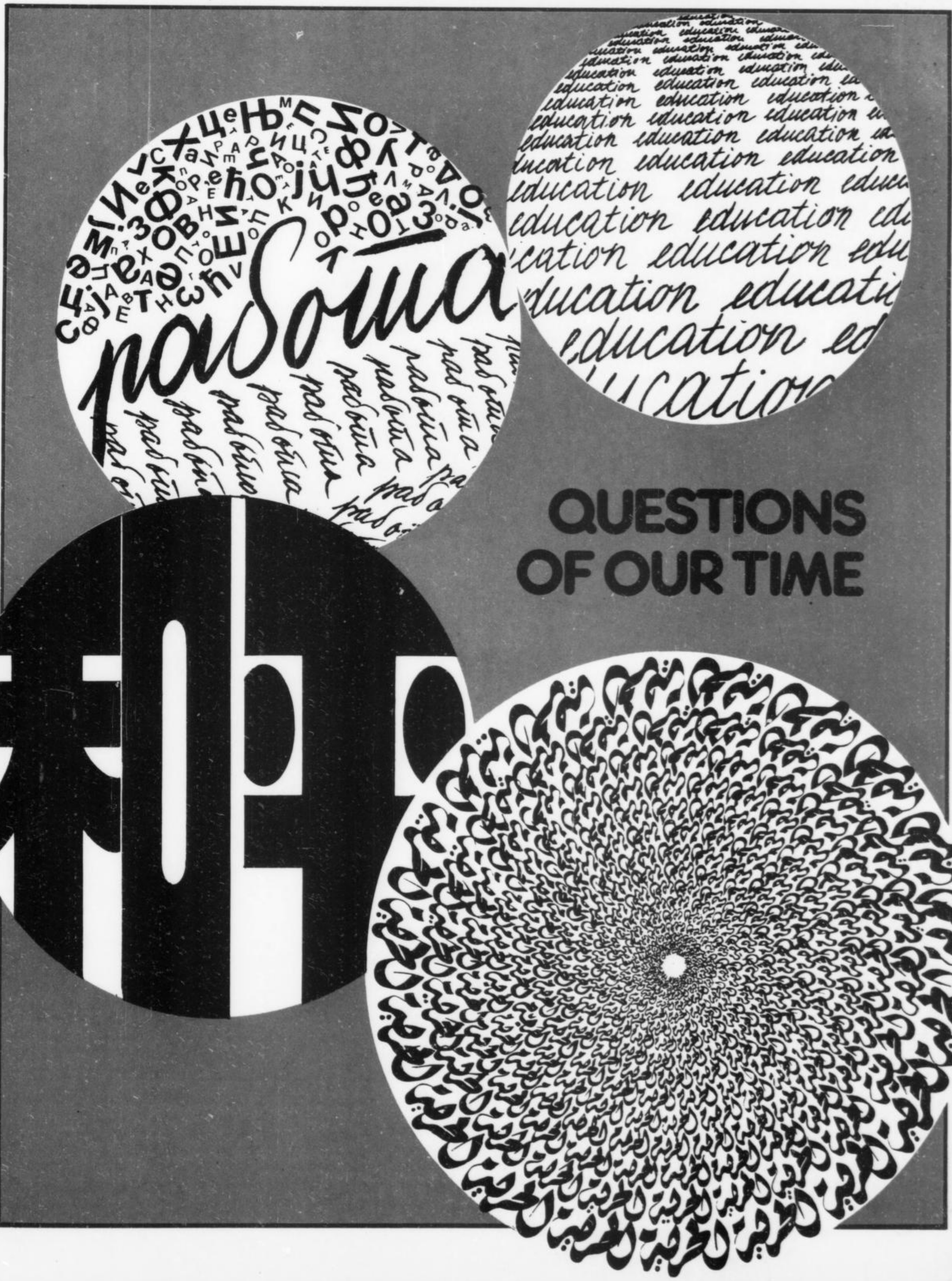
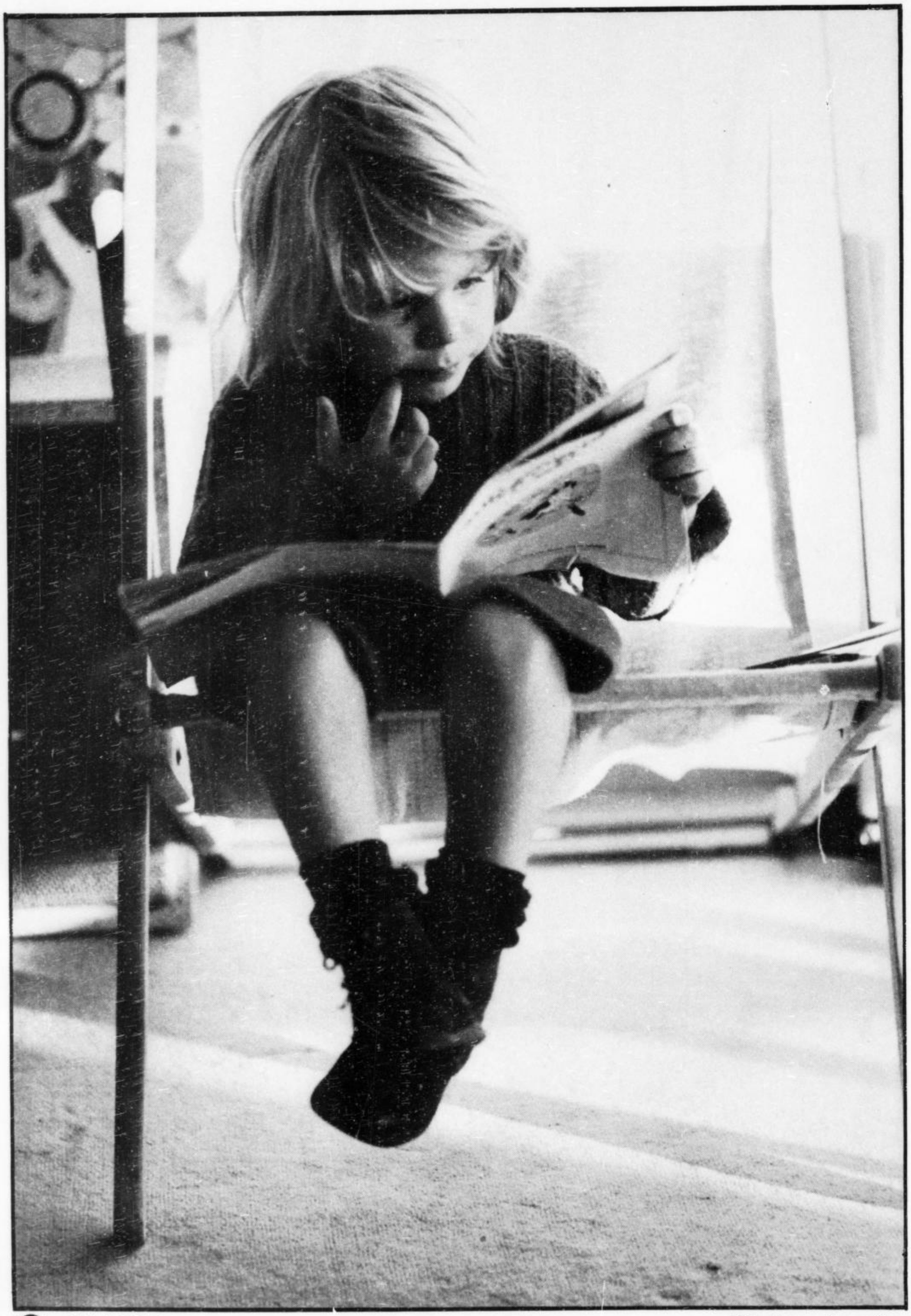
The Unesco Courier

AUGUST-SEPTEMBER 1982 - 10 French francs



# A time to live...



**5 FRANCE** **The joy of reading**

*The doors of the venerable library of world literature stand open to every seeker, none should be afraid of its size, for mass is not relevant here. Some find a dozen books enough for a lifetime and yet are true readers; others have swallowed everything and can talk of anything, yet all their trouble was in vain. For education needs something on which to work—a character, a personality. If none is there, if education—formation—stands empty-handed without a substance to mould, then knowledge may come about, but not love or life.*

Hermann Hesse
(1877-1962)

The Unesco Courier

*A window open on the world*

**AUGUST - SEPTEMBER 1982** **35th YEAR**

**PUBLISHED IN 26 LANGUAGES**

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# *Editorial*

*OUR July issue was devoted to certain problems relating to culture, in particular those concerning the application of State cultural policies. In this our annual double issue of August/September, the* Unesco Courier *examines certain aspects of a number of universally recognized world problems: the development crisis, the arms threat, the dangerous imbalances provoked by disparities in the conditions of life of different peoples, disregard of human rights, the problems of the dissemination of knowledge.*

*These two issues thus evoke Unesco's most fundamental concerns and essential functions in the world spectrum of today.*

*In both issues, the conclusion reached by our contributors, even when they appear to be most divergent, all concur in one respect: these grave world problems cannot be attacked piecemeal. Culture is inherent in development, in the long term education is the key to the maintenance of peace, new technologies to be viable must respect cultural identity, social progress within a nation is inseparable from consensus between nations.*

*This, then, is the reason for and the justification of Unesco's contribution to the attempt to achieve global understanding of the problems we have to resolve. And it is this "total" approach that is in our minds when we speak of "the world* problématique*": the urgent problems of our time are indissociable and their solution calls for a united effort of will.*

*It is to be hoped that such an approach to world problems will gradually give rise to a new mental attitude in international public opinion which will in turn facilitate the practical success of the most daring and ambitious enterprises in the service of the human community. The fearful perils of contemporary life must not be allowed to deter us from undertaking the intellectual effort of reflection that is the prerequisite of any action liable to benefit the peoples and nations of the world.*

***Cover:*** The four words contained in the circles on our cover evoke four of the great world problems of our day. Clockwise from bottom, *Liberty,* Arab calligraphy by Hassan Massoudy; *Peace,* Chinese calligraphy by Rinnie Tang; *Work* and *Education,* in Cyrillic and Latin script, by Slobodan Bijeljac.

Arab calligraphy from *Calligraphie Arabe Vivante,* by Hassan Massoudy © Flammarion, 1981, Paris.

*To try to impose on men an alien way of life is a serious error, which, far from enriching the cultural heritage of mankind, impoverishes it greatly.*

**Amadou Hampâté Bâ**

Detail from *The Large Studio,* by the Spanish artist Aguayo (1926-1977). Photo Luc Joubert © Galerie Jeanne Bucher, Paris.

# CULTURAL IDENTITY

**DEVELOPMENT as measured by an exclusively economic yardstick tends to crush the specific genius of peoples, which expresses itself through their powers of creativity. This rule applies to the industrialized countries but it is even more valid in developing countries attracted by a Western model of growth. The brutal transfer of Western technology and patterns of consumption which scorns the cultural identity of Third World peoples is bound to end in failure. These peoples should draw from their cultural identity the energy and drive to create original models for the future even if in the process they incorporate the most positive aspects of other cultures and other models.**

**For culture, a synthesis of all the creative activities of a people, should be the ultimate measure of development. With its intellectuals, scientists and artists in the forefront, each people should assume its own identity, constantly enriching and reinventing it through acts, words and works of art. Culture defined in this way opens the door to what is modern through certain forms of exchange, the grafting of knowledge and skills, processes which are no longer a threat nor a source of harm.**

**To wish to be oneself is not to shut oneself off from others, quite the reverse. Each culture needs all the others, and when one culture is endangered, every man is impoverished thereby. Both at the national and the international level, cultural pluralism means open-mindedness, and by remaining true to all that is most authentic in his experience each individual contributes to the strengthening and diversification of the wider community. Initially conceived as a necessity in a regional and national context, the affirmation of cultural identity is now seen as a duty to the international community, in the sense that it affects the diversity of cultures, the wealth of the common heritage of mankind.**

# The building blocks of culture

***by Cheikh Anta Diop***

A people's cultural identity is related to three major factors—historical, linguistic and psychological (the last of which may include the people's specific forms of religious observance). These factors vary in importance in different historical and social situations; when they are not fully present in a people or an individual, the cultural identity is flawed.

The harmonious conjunction of these factors is an ideal situation, and in practice all kinds of combinations are possible. When any one of the factors is influenced, the collective or individual cultural personality is modified; these modifications may go so far as to cause an "identity crisis."

Can these factors be classed in a hierarchy of importance or does each one play an equal part in the constitution of the cultural personality? Any answer to this question must begin with an analysis of all three.

The historical factor, first of all, is the cement which gives a people its cohesion and distinguishes it from a group whose members may have nothing in common with one another. Awareness of a common history is the most solid rampart a people can build against cultural or any other form of aggression from outside. Thus in contacts between civilizations—during the colonization process, for example—the colonizer tries to weaken if not destroy the historical consciousness of the colonized people.

The loss of national sovereignty and historical awareness resulting from a prolonged foreign occupation causes stagnation or decline when it does not actually lead to collapse or downfall into violence or anarchy. The story of Egypt under the Romans aptly illustrates this process. Egypt was a centre of civilization in the Ancient World but when its people were deprived of their sovereignty, from the sixth century BC until the second century AD, they lapsed into savagery, according to the Latin poet Juvenal who described the fierce fighting between the people of Denderah and Hombos in the second century AD.

The exercise of national sovereignty is thus by far the best school for a people's mind and soul, and the only way to keep alive its greatest virtues. Colonization always diminishes the colonized who are treated as infants. ▶

---

**CHEIKH ANTA DIOP,** *Senegalese anthropologist and physicist, is the founder-director of the Radiocarbon Laboratory of the* Institut Fondamental d'Afrique Noire (IFAN), *at the University of Dakar. In the field of the human sciences, he has published a number of works on African questions including* Nations Nègres et Culture, L'Unité Culturelle de l'Afrique Noire, *and* L'Afrique Noire Précoloniale.

*There is much glib talk of "peoples with no history", sometimes with the added rider that these are the happiest peoples. This elliptic formula merely means that their history is and remains unknown, not that it does not exist. Among these peoples too, over tens if not hundreds of thousands of years, men have loved, hated, suffered, created, fought. In truth, there is no such thing as an "infant" people; all peoples are adult, even those who have kept no written record of their childhood and adolescence.*

**Claude Lévi-Strauss**

*The ethnological view of the plurality of fundamentally heterogeneous cultures seems to contradict the evolutionist view of a process leading gradually towards a universal rationalization. This opposition seems to me to be undeniable, but it is based, I feel, on judgements of value rather than on judgements of facts.*

**Raymond Aron**

**Motif from a rock engraving in the valley of Valcamonica, Italy. Photo © Centro Camuno di Studi Preistorici, Capo di Ponte, Brescia.**

▶ It is hard to say whether or not the historical factor is more important than language. For the French philosopher Montesquieu language was the only common denominator, the supreme mark of cultural identity. "As long as a vanquished people has not lost its language," he wrote, "it still has hope."

## *How does cultural domination influence language?*

But nowhere in the world does the phenomenon of linguistic unity exist on a continental scale. Languages follow the migratory paths and fortunes of each people. Fragmentation and diversity prevail until an official effort is made or a political decision is taken to extend the use of one language, if necessary by force. This is what happened in France where, in a straightforward example of acculturation or linguistic alienation, the form of speech used in the *Ile de France* came to dominate the "dialects" of Picardy, Provence and Brittany.

This process, nevertheless, at first only affects the vocabulary of a language, not its grammar, i.e. its morphology and syntax. It is surprising that in spite of four centuries of cultural pressure, no European language (English, French, Portuguese or Spanish) has had the slightest impact on the grammar of any African language, even the most fragile or the most exposed to deformation. Vocabulary, however, is a receptive, sensitive area in which acculturation (or cultural exchange, depending on one's point of view) takes place. But however intensive it may be, the borrowing of words cannot disintegrate a linguistic system, since the newly introduced words are "tamed" and adapted to the phonetics and the genius of the borrower language.

*The work of History is not yet complete,*
*'Tis a boulder pushed up hill by our hands.*
*The moment we desist, its weight presses upon our breasts,*
*The moment we rest, it crushes our heads.*
*The work of History is not yet complete,*
*This globe has not yet been tempered in the fire of the Spirit.*

**C.K. Norwid**
**(1821-1883)**

**Spartan-style bowl on which the sufferings of Sisyphus (left) and Prometheus are depicted. Photo © Anderson-Viollet, Paris.**

The civilization with the most advanced technology usually exercises a one-way influence on the civilizations or societies with which it comes into contact. This explains the phenomenon of *Franglais* in France. Such an ascendancy can only disappear when the technological imbalance no longer exists.

Creolisation is a linguistic process which began in a specific historical situation. Isolated individuals, deprived of their freedom, were taken from their original environment and cast brutally into another environment to which they adapted as best they could. The illiterate Africans thus deported to the West Indies deformed the European languages spoken there, creating new forms of speech in which specialists have found distant echoes of the syntactical and morphological structures of African languages. The same process occurred in the French empire when Senegalese sharpshooters in the French army virtually created their own language. Similarly, in

## *Does cultural assimilation spell cultural disintegration?*

trading areas where different civilizations meet, *linguae francae* always tend to form. Such processes are without exception almost totally onesided.

Admittedly there are other, more complex acculturation processes which are reciprocal and take place between civilizations on different levels of technological development. Thus at a Conference of Black Writers and Artists the French novelist François Mauriac once maintained that civilizations influence each other via their negative aspects, and that the West had taken from Africa and the Black African world its most dubious products (he was referring to jazz!) and vice versa.

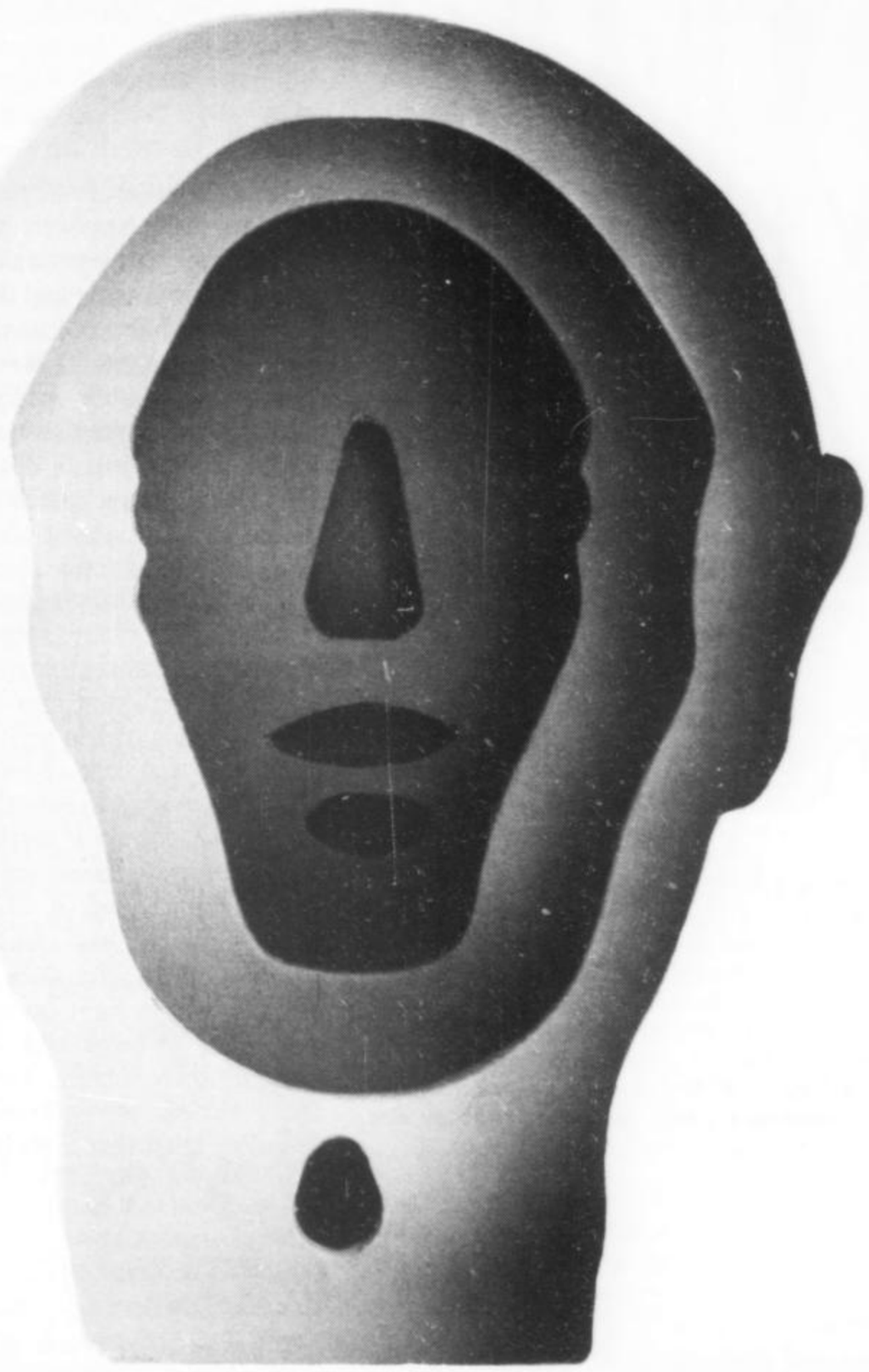
Finally, the psychological factor presupposes a certain permanence within a diversity of structures. A thorough analysis of this factor would call for study of what might be called cultural invariables, that is the unchanging psychological characteristics of the African, the European, the Asian, etc. as opposed to those characteristics that are modified by changing conditions. Far from defending the idea that human nature is immutable, the aim should be to perceive the human profile which remains if not identical, at least recognizable across centuries of incessant change.

The cultural environment may be regarded as an assimilating structure which absorbs material from outside and evolves while remaining aware of its own identity. Assimilation enriches it without affecting its destiny. Only destruction by some external agency, disintegration (whatever the reason), or hardening of the arteries because of excessive autarky can be fatal to it.

And so Mauriac's remark should be taken as a witticism, for civilizations can influence each other through their positive aspects.

It is accepted today that African art has had a lasting influence on twentieth-century Western art. The Western artist has borrowed from his anonymous African counterpart not so much a canon of beauty as the right to break away from such classical norms as the Golden Number or anatomical realism, which in various forms have dominated Western art from Antiquity until modern times. The creative freedom of plastic forms and rhythms, a renewed liberty of invention—these are the great lessons that modern art has learned from African art. This is an excellent example of a positive influence arising from contact between two civilizations pursuing a course which is both parallel and autonomous.

Each civilization has two ways or levels of handling concepts. The first is concerned with all that is specific, with an area that is, so to speak, protected by the people's unique psychological barrier, an area which can only be understood from within. This is also the level of poetic expression; it is the core, the wellspring, the heart of all living culture, of all civilization. Jean-Paul Sartre defined it well when he wrote that "the specific characteristics of a society correspond precisely to the untranslatable locutions of its language." The second way or level is concerned with the universal, with general ideas that everyone can grasp, with the area in which one civilization can influence another.



*I am not a man of the Diallo looking at a distinct Western world and judging coolly what I can take from it and what I must give it in return. I have become both. It is impossible to remain lucid on the horns of such a dilemma. One becomes a strange being, distressed not to be two.*

**Cheikh Hamidou Kane**

***Anthropomorphic Head Sections,*** **by British sculptor Roy Adzak. Photo © Gérard Dufresne, Paris. Xavier Jeupitre Collection.**

When the core perishes, the life of societies and civilizations comes to an end. Hence the widespread efforts today to safeguard this productive uniqueness which is not isolation nor withdrawal but the fundamental condition of universality.

■ **Cheikh Anta Diop**

# The emergent peoples of Latin America

## *The cultural profile of a continent*

*by Darcy Ribeiro*

WE anthropologists have been so busily engaged in micro-studies of acculturation that we have never got around to elaborating a theory of ethnic transfiguration that would enable us to understand how modern peoples are formed. By concentrating our attention on the supposedly reciprocal cultural influences at work between peoples we have learned something of how tribal cultures are destroyed and rebuilt but remain almost totally ignorant about the development of modern peoples and nations.

This is one of the consequences of reducing anthropology to "barbarology", a science interested only in primitive peoples seen as living fossils of the human species, a vision, one might add, which is so narrow that, even in terms of this limited objective, little progress has been made. Rarely do any of the numerous specialists of the question ever mention, even less denounce, the brutal character of the colonial relations of tribal peoples with the frontier zones of civilization. Nor do they make clear the ways in which those peoples, alienated from the tribal condition, become victims of deculturation and candidates for incorporation into the mass of national societies.

From an ethnic-cultural point of view, modern American peoples present certain distinctive characteristics. The first of these is the astonishing uniformity of the two blocks—that of the neo-British in the north and of the neo-Iberian in the south. England, which never successfully absorbed the Scots, the Irish or the Welsh, managed nonetheless to construct a new and gigantic Anglo-Saxon world in North America. Spain, which was obliged to respect the identity of the Basques, the Catalans and the Galicians, built up a Hispanic America ten times as large and more homogeneous than its own society. Portugal, finally, has more variety of regional accent in its small territory than Brazil with its continental immensity and its twenty million inhabitants.

This uniformity brings to light, however, another characteristic of modern and, in the largest sense of the word, American peoples, a characteristic which is common to many non-European peoples—its diversification in four distinct historical and cultural configurations:

(1) *Witness Peoples,* that is, those resulting from the clash of the European invader with developed civilizations such as the Aztecs, the Mayas and the Incas; no real synthesis took place between a surviving "Indianness" and the newcomers from Spain.

(2) The *New Peoples,* produced by the coming together of Indians from the tribes, black slaves, and whites from the Iberian peninsula, employed on the tropical plantations, in forest exploitations, or in the mines from which precious metals were extracted. They gave rise to a completely new ethnic group, very different from its three components, which is still in search of its identity. These are peoples in the process of becoming and who, lacking a long past of which they can be proud, depend on the future for self-definition.

---

**DARCY RIBEIRO,** *Brazilian writer and anthropologist, is a specialist on the Indian tribes of Amazonia. He has been rector of the University of Brasilia, has served as his country's Minister of Education, and has taught in various Latin American countries, notably in Peru. He is the author of* Civilization Process *(Smithsonian Institution Press, 1969) and many other published works including a novel,* Maira, *inspired by the life of the Amazonian Indians.*

(3) *Transplanted Peoples,* such as those of North America and Canada, who are simply European transplantations on American soil (compare also Australia and New Zealand). Argentina and Uruguay can also be placed in this category; although their populations consisted at first of "New Peoples", they underwent a migratory flux of such importance as to change them completely.

(4) *Emerging Peoples* corresponding to indigenous groups issuing from the "Witness Peoples" and aspiring to national autonomy.

Each of these groupings corresponds to a different process in the formation of population and nationality. We Brazilians, for example, as a new people, along with the Venezuelans, the Cubans, etc. came from the cross-breeds, sons of white fathers and Indian or black women, anxious to identify with the father but rejected by him. We grew up, all of us, as the spiritual killers of our maternal lineage, wearing down thousands of Indians and Blacks in the process of bringing ourselves into being. We survive in the Tropics because we have learned to live here with the Indians, making a living from the small plots where we cultivate the plants inherited from them. We hunt, we fish, we build our huts exactly as they did. We even use Indian words to name the things of the earth and the sky.

For the black slaves coming from Africa, civilization meant the loss of their egalitarian tribal community, where each man lived as an individual, and being changed into an object or commodity. In the *quilombos* (compounds) they were reduced to the state of animals. There they learned to carry out simple tasks of commercial production with the whip as teacher. They worked from dawn till dusk, seven days a week, on their small cultivated plots in order to have something to eat. As the master never put together Blacks speaking the same language, in order to reduce the possibility of mutiny, they were forced to communicate between one another in the master's language. Thus, little by little, they became rehumanized, learning to be, to speak and to understand; they became new beings, ethnically transformed.

Due to the high mortality rate, this savage system was only able to function thanks to the constant introduction of fresh black slaves. To assist this process English and Spanish entrepreneurs raised the capital to establish the first modern multinational enterprises, prodigious organizations to pursue the Blacks in Africa and embark them on slave-ships for shipment across the Atlantic and resale in America.

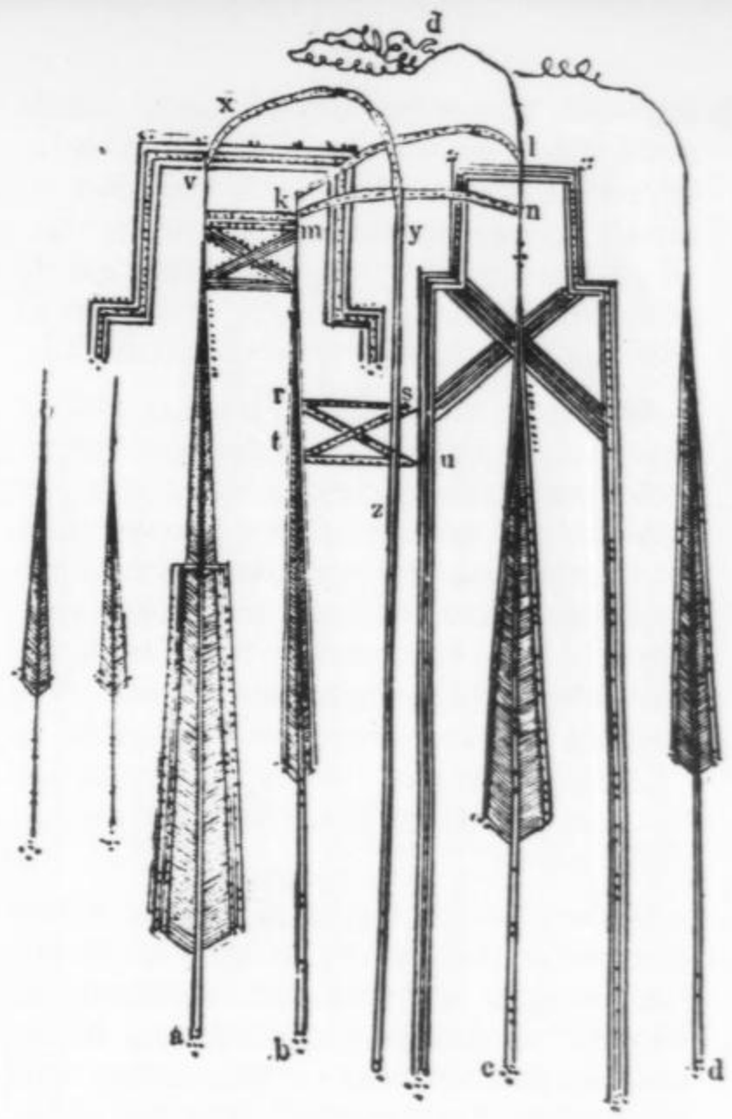
There were always fewer black women than men—one woman for every four men perhaps. They were impregnated by the old boss and his young son, then by the foreman, etc. Thus came to be born a number of smiling mulattos who increased the number of slaves in the service of the master. Products of this land, they quickly gained a bad reputation as runaways, pretentious and suspect mulattos who did not know their true place. Still very badly regarded, these *mestizos* born of Indians and mulattos form the major part of Latin Americans today.

The process of formation of the "Witness Peoples", such as the Mexicans, Guatemalans, Peruvians, Bolivians and Ecuadorians, was completely different. Developed civilizations with cities and a nobility, priests, armies and bureaucracies, they were quickly subjugated by the Europeans who captured their cities, destroyed their temples, beheaded their nobles, defeated their armies and took over the bureaucracy the better to dominate the enslaved Indian people.

As a result, a prodigious mixing of a few Europeans with a multitude of captured Indian women took place. But the *mestizos*—curiously much more westernized—isolated themselves in the cities and towns, still differentiated from the Indians who continued to live in a universe of their own, a peasantry cut off from contact with the urban world. They apparently represented above all else an inexhaustible source of manpower for all kinds of work.

Until recently, these natives were seen by researchers as simple peasants still holding out against what seemed to be an inexorable assimilation. The feeling was that sensible agrarian reform and help in the form of some elements of education, together with cunning play on certain indigenous customs, would encourage them to lose their mania to be Indians and to become simply good Peruvian, Bolivian, Guatemalan or Mexican citizens.

Lately, however, the perception that they are not atypical peasants has become more generalized. They are, in fact, oppressed people and as such they aspire legitimately to be masters of their own destiny in throw- ▶




***The press informs us that a bitter worldwide struggle is on for leadership among the major languages: English, French, Russian, Chinese, Italian, Portuguese, Spanish, etc. One of the most serious defeats human culture could suffer would be for one of these languages to triumph at the cost of the others. The three or four thousand languages spoken by man are one of our most splendid natural resources, as indispensable to men as is (or was until recently) the "green lung" of virgin forest in the Amazon. These vernaculars are not just local speech forms but cultural roots. If we let them rot or be severed, we will be literally uprooted ourselves—abandoned to suffocate, to suffer a cultural death with far-reaching consequences.***

**Marc Soriano**

**Pictograph "letter" from a Yukaghir girl (north-east Siberia, beginning 20th century) to her absent lover: "I am all alone at home. You have left me and gone far away. You love a Russian girl (with full skirt) and you have married her (under one roof with her), but your marriage is not happy (crossed lines between them). You will have children and I shall remain alone and sad (crossed lines). I shall always love you, although there is another man who loves me." Photo © Musée de l'Homme, Paris.**

*Racism is one of the most disturbing phenomena of the great revolution of the modern world. At the very time when industrial civilization is penetrating to all points of the globe and is uprooting men of every colour from their age-old traditions, a doctrine, treacherously scientific in appearance, is invoked in order to rob these men of their full share in the advantages of the civilization forced upon them. There exists in the structure of our civilization a fatal contradiction. On the one hand it wishes and insists that certain cultural values, to which it attributes the highest virtues, be assimilated by other people. But conversely it will not admit that two-thirds of humanity is capable of attaining this standard which it has set up.*

**Alfred Métraux**
**(1902-1963)**

**The Lanlate satellite ground station which handles Nigeria's international telephone, telex and television communications. Photo Mike Wells © Parimage, Paris.**

ing off the hegemony of the creole minorities, whites in fact, who fought for independence, but only to serve their own interests. Indeed, wherever they took the reins of government they oppressed the majority native populations as much, if not more then the old colonials from the metropolis.

The aggressivity of the Flemings and the Basques, for example, in their self-affirming movements, reveals how serious can be the conflicts that can occur when peoples much more exploited and oppressed, such as the Latin American Indians, start to revolt. Some of them have already begun to do so, demanding self-determination and the freedom to be themselves culturally as "Emerging Peoples" rather than as custodians of a folklore which enriches the national mosaic.

If the Spanish model of unitary States dominating multi-ethnic societies persists in the nations where these "Emerging Peoples" live, violent conflicts will be inevitable and could even degenerate into ethnic wars. On the other hand, the adoption of forms permitting a more active participation—as in Switzerland, for example—through the organization of multinational States corresponding to multi-ethnic societies could do something to reduce such conflicts, even if it cannot eliminate them altogether.

## *A culture of* fiesta *and* siesta?

What is unfortunate in this situation is a tendency to complicate the already very tense framework of social struggle with ethnic-cultural factors. The ethnic energies which are in the process of mobilization may very well merge with class demands to create a revolution permitting the building of a new State, at once more open and egalitarian at the ethnic level and more fraternal at the social level. The contrary could also occur, with the dominant classes making use of these tensions to perpetuate their own rule.

Different levels of civilization correspond to these different historico-cultural configurations. It is a well known fact, for instance, that the "Transplanted Peoples" achieve much higher levels of development within industrial civilization that any of the others, especially those transplanted to North America who, even if they put down roots a century later and were very much poorer and had a less illustrious colonial past, are still very much in advance.

There are good reasons for this. The "Transplanted Peoples" simply continued on the other side of the ocean the kind of life they had led in Europe, fulfilling the potentialities of the civilization to which they already belonged within the vast spaces which they succeeded in conquering. The "Witness Peoples" and the "New Peoples", however, developed from the survivors of native populations who were victims of the terrible massacres that followed the European invasion. Moreover, they had been torn from their original culture and inserted in a second class version of the culture of the colonizers.

Whereas in the settlement colonies the white emigrant was generally offered the possibility of becoming a free farmer, in the subjected and enslaved zones the work-force was treated, not in terms of people with rights, but as animals. In fact, the original population has always been treated as a source of energy to be burnt up and used in much the same way as coal was to be utilized later on.

For their part, the Latin-American élites offer a different explanation for this backwardness. For decades and centuries they have consoled themselves with the "erudite" notion that the underdevelopment of their countries was due to natural, unalterable factors. Thus the cause was seen as the intolerable tropical climate and the uncontrolled mixing of inferior races unsuited to civilization.

At the same time, without even questioning these explanations, which were both causal and consolatory, they pointed to other handicaps, such, for example, as the Catholic religion which was deemed inimical to progress.

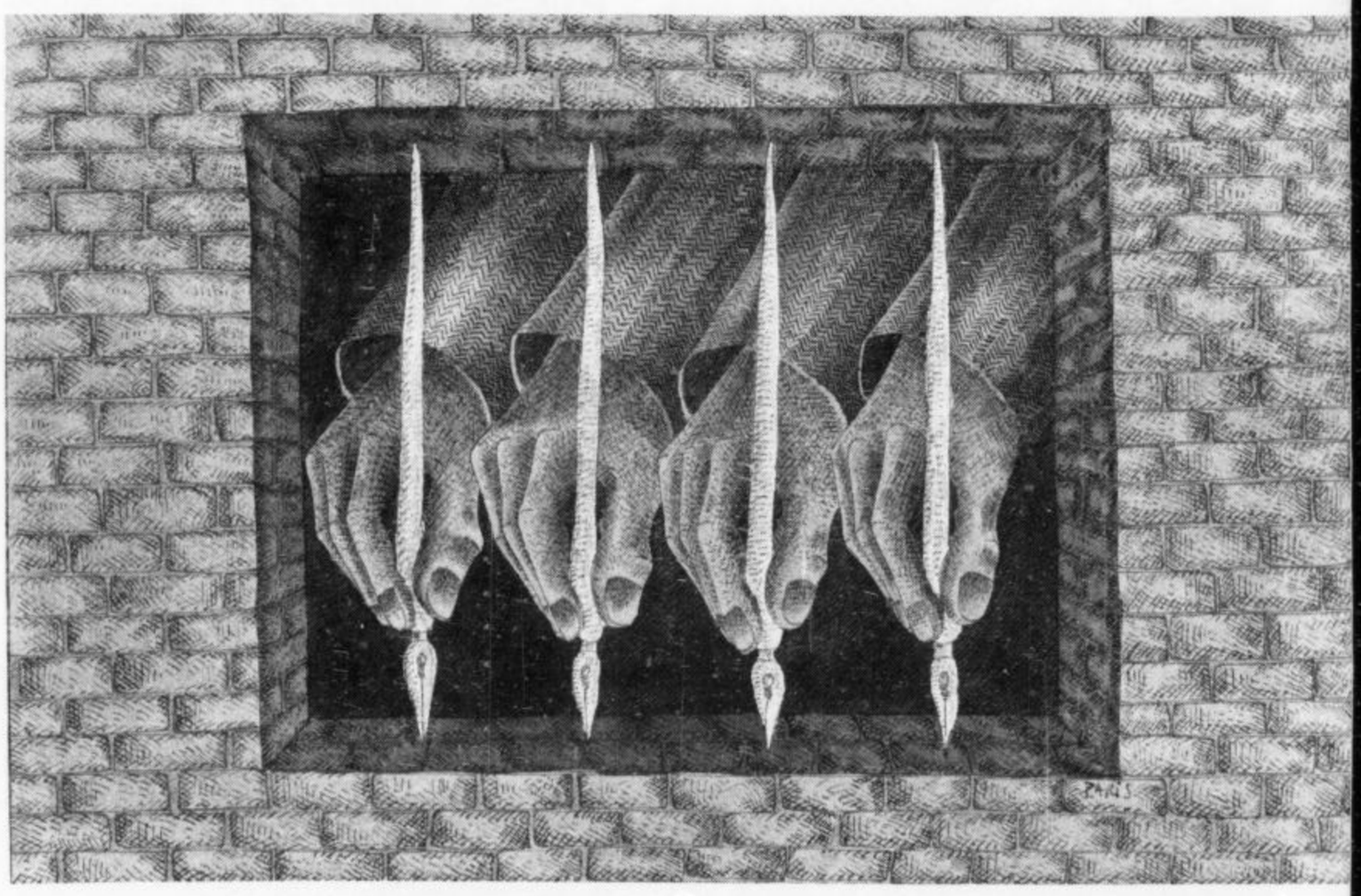
A still further Latin-American misfortune was the Iberian heritage which accounts for the indolence and intolerance of these exotic peoples, more African than European, from the confines of the Mediterranean. Many still regret the expulsion of the French and the Dutch.

In recent years this consolatory discourse has been challenged. Some people came to realize that the Tropics were a good place to live. Others showed that those who work from sunrise to sunset in our countries building whatever is constructed there, cultivating whatever is cultivated and manufacturing whatever is manufactured, are, in fact, the Blacks, the *mestizos* and the poor whites.

Today there is a growing awareness that, as in the past, the old social classes run the country for their own enrichment and profit; it is they who supply the managers of the multinationals and the technocracy that organize us, ever more effectively, for the greater benefit of their mother-companies and the perpetuation of the same sterile dominant classes.

Over and above the multiple alienations which are specifically ours, others, still more serious, come to us from Europe in the form of ideological contraband. The first of these was always, and still remains, our ignoble cultural heritage of racism, the principal arm of the European ideological arsenal of colonial domination.

In attributing to himself the role of civilizing agent, the European began by representing the outside world as inhabited by subraces which he was called upon to regenerate. The strategem is so terrible and subtle that the Blacks, the Indians and the *mestizos* acculturated by Europeans, having profoundly integrated in their consciousness the idea of their own ugliness and inborn inferiority, suffer terribly for simply being as they are.



***Criticism of one's own society and culture is also one of the primary functions of culture which, in our age, has been particularly accentuated. The* poète maudit *of the romantic era has today become the committed or revolutionary writer or artist. Refusing injustice, he demands and exercises his own freedom to further economic, social, moral or cultural revolutions. Such critical or dissident activity is necessary for the health of peoples, an essential component of democratic pluralism and an indispensable motor of social progress and change.***

**José Luis Martínez**

**Pen... itentiary! Drawing © André Paris, Fontenouille, France.**

Confronted with the overwhelming evidence of the physical grace, vivacity and vigour of the mulattos and *mestizos,* the theorists who propound the superiority of the white race have said for centuries that the latter are nothing more than human mules and as such not only sterile but incapable of civilization. Despite their beauty and incomparable grace, black and brown women were to be despised not only because of their ancestral servility, but above all because they were indelibly marked with the colour and sign of the inferior races.

Latin-American racism is, it can be seen, an exported European fruit. Transported here, it grew and prospered. As compared to the Saxon variety, the only typical characteristic of our racism is its "assimilative" and mixing tendency. The Indian and Black are no more than the raw material for making more cross-breeds whose "whitening" progresses each time a little more until they become complete whites.

The second form of ideological and Eurocentric contraband has to do with the so-called differential quality of Western civilization, which is its singular creativity. This vision claims all the latest material advances of civilization as being intrinsically European. In reality, they are cultural and human creations achieved in the course of evolution and as the result of the exploitation of the material world. However, because they happen to have appeared in Europe, they are characterized by "Europeanness", which has led to the error of imagining that sources of energy and mechanical and technical processes are inherent to a particular civilization.

***This culture considers itself superior, not wanting to assimilate others or to allow itself to be assimilated. It is ready to incorporate the men of the discovered territories, but only on condition that they abandon their own culture. Thus the culture of the conquistador and the colonizer was superimposed on the "demonic" Indian culture. Christian temples were erected on the ancient Aztec* teocallis *(mounds), in place of their ancient idols were raised up a cross, a statue of the Virgin Mary or of a saint.***

**Léopoldo Zea**

***Los Maestros de Coro y de Escuela*** **(Choirmasters and Schoolmasters). Drawing by Felipe Guamán Poma de Avala for his book *Nueva Crónica y Buen Gobierno,* a lengthy account of indigenous South American cultures and the Spanish conquest, probably written between 1578 and 1613.**

## *What are the fruits of Latin America's African connexion?*

This misconception is as stupid as believing that petrol is Christian or electricity English, when in fact they are conquests of human evolution which can be adopted by any society which has reached a certain level of civilization. They may even serve to reinforce cultural autonomy and defend ethnic identity. Such an eventuality is not limited to the entry of goods as merchandise into the imperialist system of unequal exchanges organized to exploit and enslave other peoples. The fact, for example, that the Chinese productive system is becoming more and more technical does not make it more westernized. On the contrary, it brings about the very conditions in which it can free itself from European influences to become more majestically Chinese.

One last comment on our supposed deficiencies. It is time we taught the rest of the world to see us as we are and not as mere stereotypes. The idea of a Latin America which is all *siesta* and *fiesta, machismo,* of ready-made dictators, frenetic rumbas and an unhealthy indolence has exactly the same function as racism: it completely overlooks the reality of class and colonial domination.

I have noticed people taking longer lunch breaks in Holland and Italy than in Brazil. The long European round of summer holidays does not, unfortunately have any parallel here. It is not, however, as creative, vital and beautiful as our festivals.

As for the legendary Latin American laziness, it is worth pointing out that a worker in a car factory in Mexico or Sao Paulo works just as hard as his German counterpart, earning in the process five times less. On the other hand, directors and bosses in Brazil make ten times more than their European counterparts. Exactly the same point can be made with respect to the *boia-fria* (day-worker) of Parana State or the *vaqueiro* (cowboy) of Bahia who work much more than a Texan cowboy or a French peasant, slogging away without a break under conditions much worse than theirs, and for ten times less remuneration. So much for our laziness.

For us, indolence, like affectation, never characterized the Blacks, the Indians or the mulattos, nor, for that matter, the poor Whites. Rather they were the lot of the rich white man, the most delicious of his privileges.

Even the few merits which it is grudgingly agreed the Latin-American peoples may possess, are instantly qualified by the depreciatory tone employed in speaking of them. Such is the case, for example, with our popular music, recognized and praised as beautiful, rhythmic and vibrant thanks to its African quality. Even this is held against us when we are dismissed as insatiable dancers of sambas, rumbas and boleros.

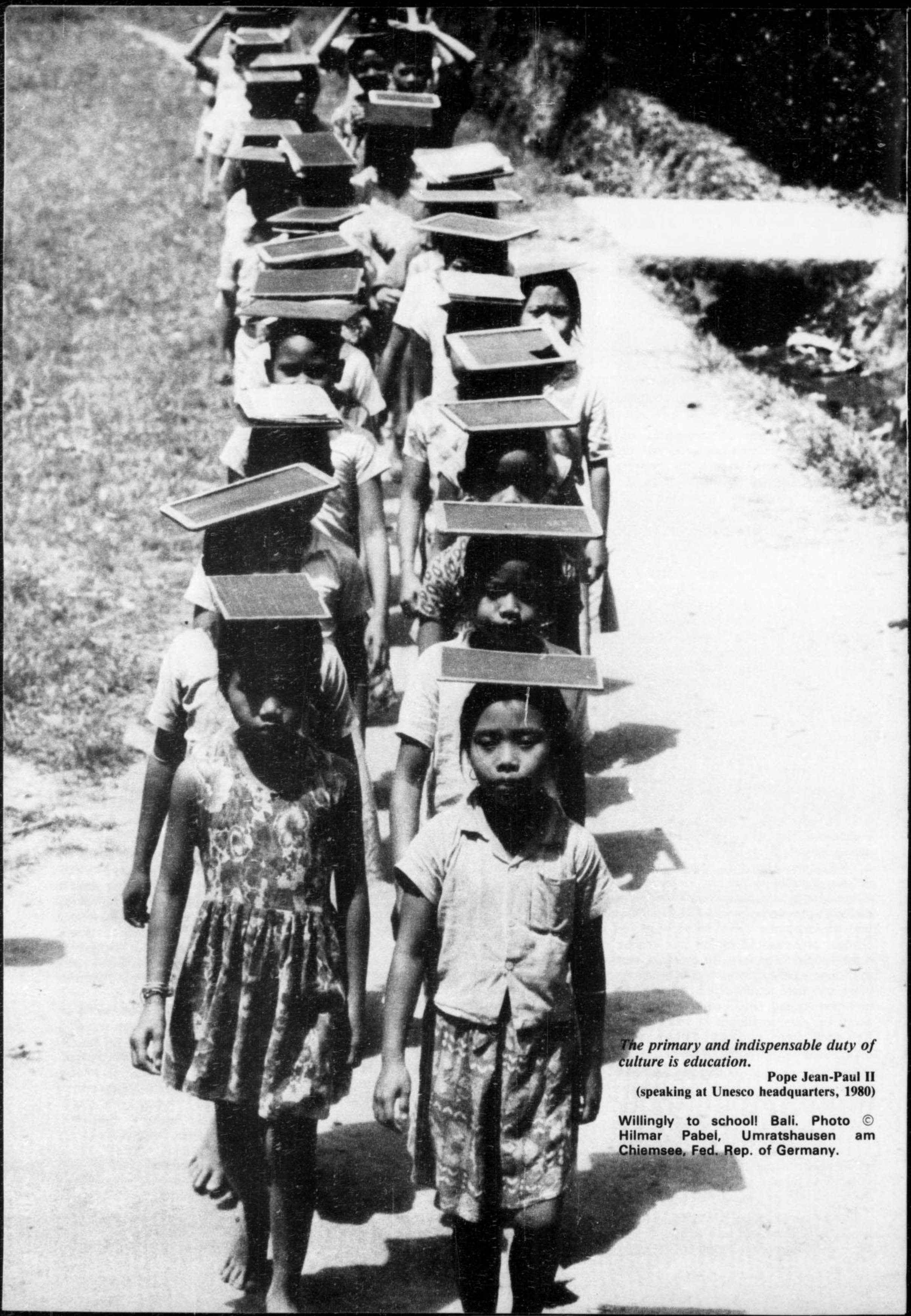
The "boom" currently enjoyed by Latin American literature is even more irritating, and here the prejudice is blatant. A boom, no matter how surprising, does not need to be explained as a phenomenon. The simple truth is that the modern world has few better novelists than García Márquez, Borges, Cortázar, Rulfo and Guimaraes Rosa, and few better poets than Neruda, Cesar Vallejo and Drummond.

Some deficiencies, it must be admitted, have justly been laid at our door. Take *machismo* for instance. It is true that we have often been guilty of it, but our women are actively engaged in re-educating us so that, in addition to being warm and loving, we can be co-operative, cordial and, why not, faithful.

The *Caudillo*-style authoritarianism which is often attributed to us is not, in fact, ours. In any event, it is not a creation of the Latin-American people who have suffered and still suffer in the flesh from the stupidity of the enslaving colonial or multinational "petty kings" which European civilization has imposed on us.

We are, it is clear, peoples who do not yet exist; but we shall exist. A process of declining civilization has destroyed our sources and melted us into an immense block, of importance today if only because of the human mass it represents: 400 million souls. Another emerging process of civilization will transfigure us so that tomorrow ours will be a privileged place on earth, free, prosperous and fraternal.

■ **Darcy Ribeiro**



*The primary and indispensable duty of culture is education.*

**Pope Jean-Paul II**
**(speaking at Unesco headquarters, 1980)**

Willingly to school! Bali. Photo © Hilmar Pabei, Umratshausen am Chiemsee, Fed. Rep. of Germany.

# EDUCATION

**THE eradication of illiteracy is the most urgent educational problem at the planetary level. In 1970 almost one-third of the world's adult population was illiterate: 32.4 per cent of persons aged 15 and over, a total of 742 million people. By 1980 it was estimated that the illiteracy rate had dropped by around 3.5 per cent during the preceding decade. However, because of soaring population growth the number of illiterates had risen by 72 million since 1970—an increase of 7 million a year—and stood at 814 million.**

**These figures show that the struggle against illiteracy and its attendant inequalities (for illiteracy affects above all the countries of the Third World) is a race against the clock. But the statistics also show that no less flagrant inequalities exist at the other end of the scale, in higher education. The total number of scientists and engineers involved in research and development throughout the world (with the exception of China and certain other countries) was estimated to be almost 2.8 million in 1974, in the middle of the second development decade; 2.6 million of them, 94 per cent, were working in the developed countries, which thus had almost 2,600 scientists and research workers per million population, as opposed to 100 per million in the developing countries.**

**Harmonious cultural and economic development will be beyond the reach of mankind until the imbalances in basic and higher education are radically corrected. One of the surest ways of achieving this goal is the democratization of education. Access to education should be open to all: rural populations, minorities, workers and migrant workers, boys and girls, adult men and women. By giving everyone the chance to pursue their education as far as their gifts permit, this democratization would reflect concern for quality as well as quantity.**

**If it is to be more effective, education should also be better adapted to the cultural environment. It yields its best fruit when it is firmly rooted in the cultural identity and traditions of each people.**

**Finally, education can be made more relevant to the economic development of each country when it is more closely geared to meeting its people's short- and medium-term needs, and when it attaches a new value to manual work thus healing the debilitating breach between manual and intellectual work.**

# Blackboard bungle?

## *A defence of the school as the cornerstone of education*

*by Arthur V. Petrovsky*

ACCORDING to Unesco statistics, almost one-sixth of the world's population is still illiterate. The percentage of illiteracy is particularly high in Africa and Asia. The apparently unresolvable contradiction between the demand for education and the material possibilities of satisfying this demand have led to talk of a "world education crisis", although attempts to extrapolate the real difficulties confronting education in the developing world to the educational situation in other countries seem to go a little too far.

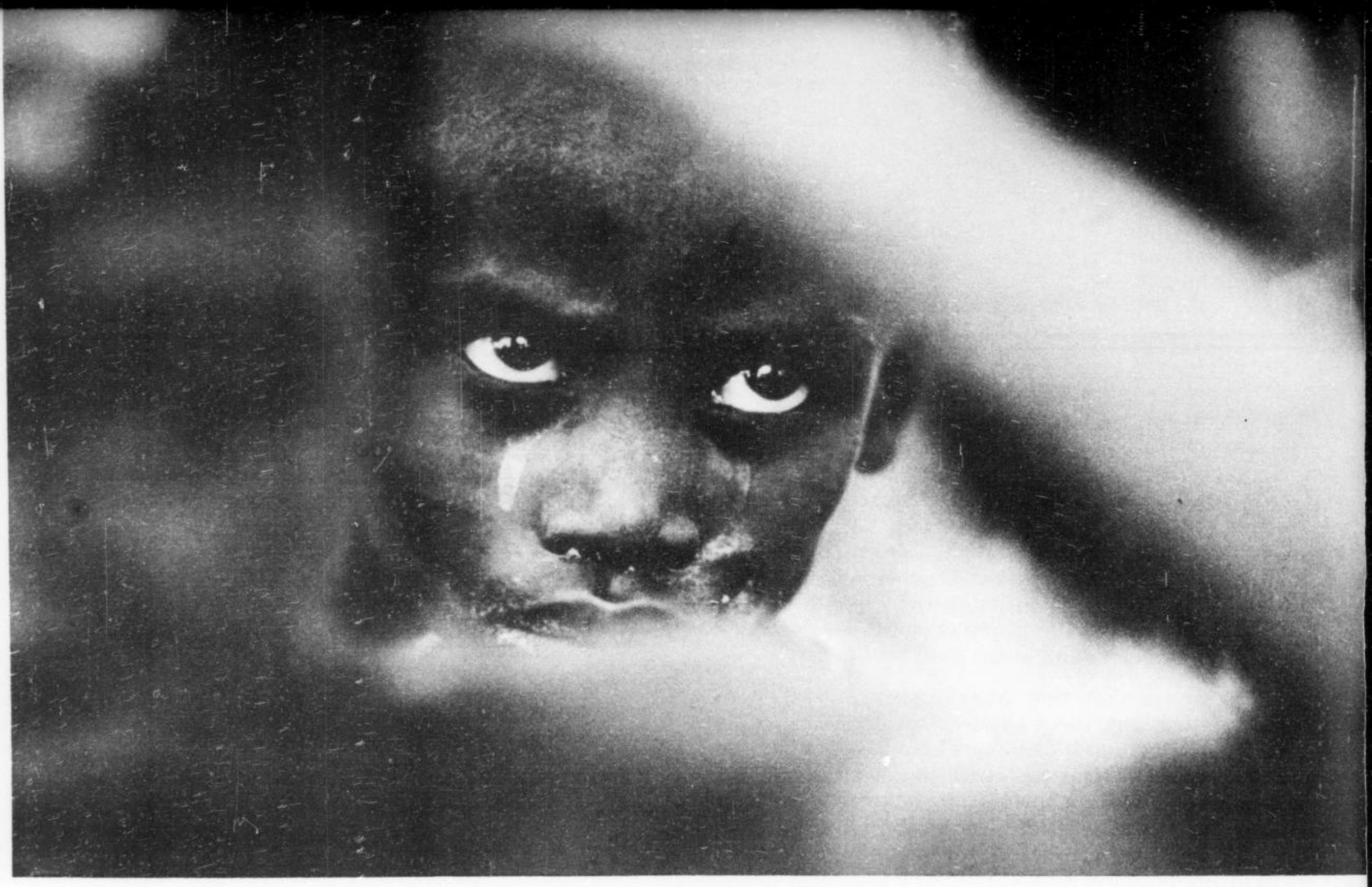
Thus the USSR is today in the process of solving, with overall success, the problem of teaching and educating its rising generation. The country which sixty-five years ago had an illiteracy rate of 73 per cent has in this short period eradicated illiteracy, whereas forecasts made by the Education Ministry of Tsarist Russia shortly before the October Revolution indicated that it would take at least 120 years to provide universal education in European Russia, and 4,600 to achieve the same goal in central Asia and the Caucasus.

The right to education, proclaimed by law, is exercised in a whole network of educational establishments of different kinds. In the USSR one person in every three is a student, and over 100 million persons are receiving some form of education. Some 44 million children attend schools providing a general education.

These observations should lead to the establishment of a sharp distinction between the characteristics of educational development in the developing countries and those in the industrially developed countries.

In the developing countries the expansion of educational systems and the increase in the number of pupils are sure to lead to the characteristic distortions of a "growth crisis". The first of these, ▶

**ARTHUR VLADIMIROVICH PETROVSKY,** *Soviet psychologist, is Professor of Education and Psychology at the State University of Moscow and a member of the Academy of Pedagogical Sciences of the USSR. In 1971 and 1972 he was a member of Unesco's International Commission on the Development of Education. He is the author of several works on psychological and educational questions, and of textbooks for use in higher education.*

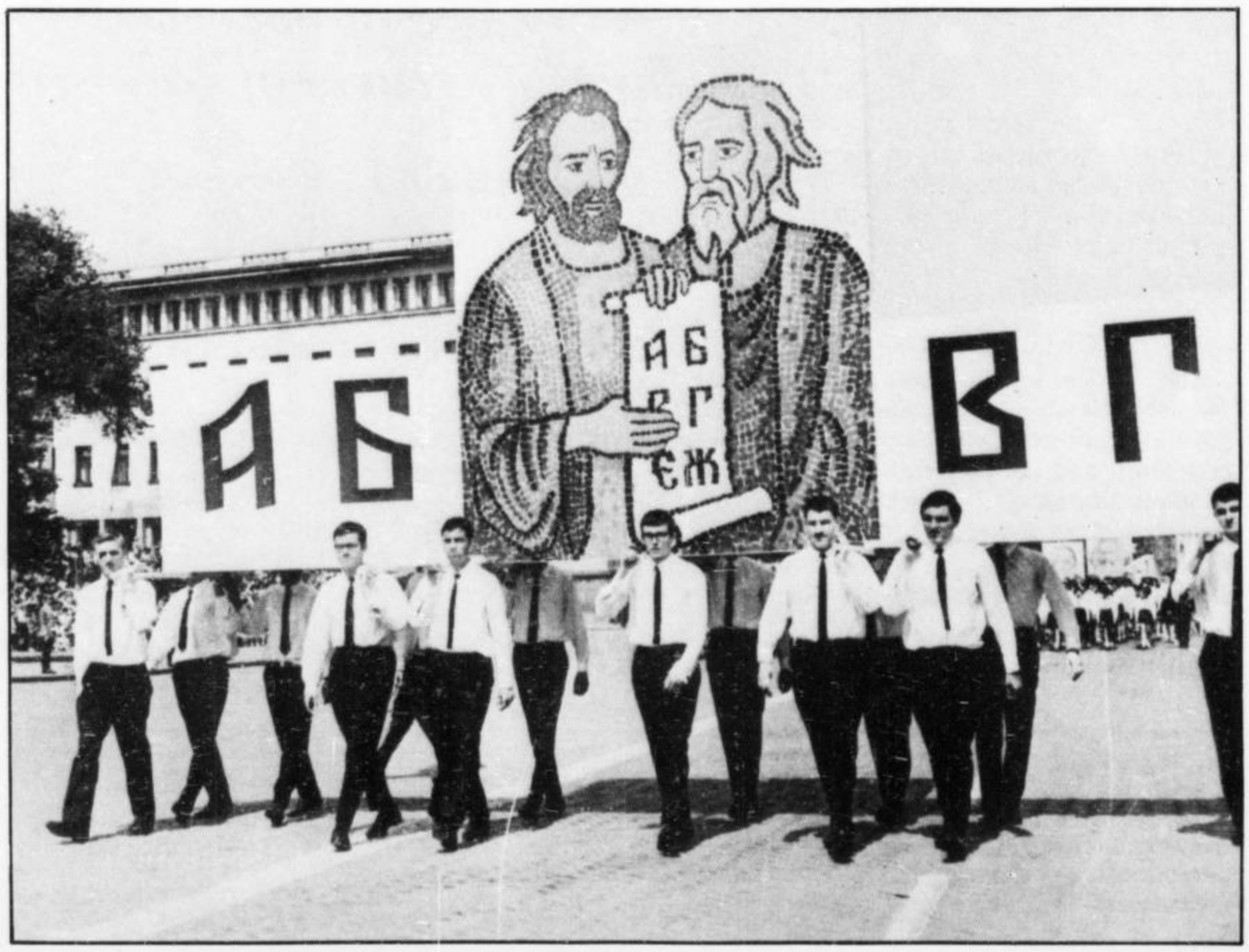


*We do not ask of the strong that they should have a* **bad** *conscience, merely that they should* **have** *a conscience.*

**Paul Marc Henry**

**Ugandan boy. Photo A. de Wildenberg © Gamma, Paris.**

▶ breaking the link between the educational system and the needs of society, will lead to the school being cut off from the outside world, and to an increase in the ranks of the educated unemployed. Secondly, distorsions will arise within the educational system itself, stemming from a lack of co-ordination between its various stages and constituent parts. Still poorly attended and beyond the reach of the mass of pupils who complete primary schooling, the secondary school forms a bottleneck, especially since it does not prepare its pupils for productive work but for entry to an institution of higher education which in practice the majority of them will never reach.




*Languages are the pedigrees of nations.*

**Samuel Johnson (1709-1784)**

**St. Cyril (827-869) and St. Methodius (825-884) who translated the Bible into Old Slavonic and invented the Cyrillic alphabet. Photo © Missi, Paris.**

| Continents, major areas and groups of countries | Public expenditure on education (in millions of dollars) | | | | Public expenditure on education as % of GNP | | | | Public expenditure on education per inhabitant ($) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1965 | 1970 | 1975 | 1978 | 1965 | 1970 | 1975 | 1978 | 1965 | 1970 | 1975 | 1978 |
| World total* | 96 026 | 159 898 | 333 079 | 474 014 | 4.8 | 5.4 | 5.7 | 5.6 | 38 | 57 | 109 | 146 |
| Africa* | 1 737 | 3 102 | 8 320 | 12 972 | 3.4 | 4.2 | 4.8 | 4.8 | 6 | 9 | 21 | 29 |
| America | 43 374 | 77 355 | 127 622 | 171 985 | 5.1 | 6.3 | 6.1 | 6.0 | 94 | 152 | 229 | 291 |
| Asia* | 7 221 | 12 910 | 44 368 | 80 039 | 3.5 | 3.5 | 4.9 | 5.0 | 7 | 11 | 33 | 55 |
| Europe (incl. USSR) | 42 624 | 64 546 | 145 816 | 200 240 | 5.0 | 5.2 | 5.8 | 5.7 | 63 | 92 | 200 | 271 |
| Oceania | 1 071 | 1 984 | 6 953 | 8 778 | 3.7 | 4.4 | 6.2 | 6.3 | 63 | 104 | 331 | 399 |
| Developed countries* | 88 173 | 147 302 | 295 520 | 418 907 | 5.1 | 5.7 | 6.0 | 5.9 | 86 | 137 | 263 | 366 |
| Developing countries* | 7 853 | 12 596 | 37 559 | 55 107 | 2.9 | 3.3 | 4.1 | 4.1 | 5 | 7 | 19 | 26 |
| Africa (excl. Arab States)* | 1 106 | 1 860 | 6 954 | 7 257 | 3.2 | 3.6 | 4.3 | 4.1 | 5 | 7 | 16 | 21 |
| Asia (excl. Arab States)* | 6 845 | 12 331 | 39 226 | 72 965 | 3.4 | 3.5 | 4.7 | 5.0 | 7 | 11 | 30 | 52 |
| Arab States | 1 007 | 1 822 | 8 508 | 12 789 | 4.0 | 4.9 | 6.8 | 5.6 | 10 | 16 | 63 | 87 |
| Northern America | 40 049 | 71 839 | 113 288 | 151 187 | 5.4 | 6.7 | 12.2 | 6.6 | 187 | 318 | 480 | 622 |
| Latin America | 3 324 | 5 516 | 14 334 | 20 798 | 3.0 | 3.3 | 3.7 | 4.0 | 13 | 20 | 45 | 60 |

*Unesco Statistical Yearbook, 1981*

**General note** — Owing to the rounding of figures, the totals and sub-totals shown in this table do not always correspond exactly to the sums of their component items.

***World Total** — Not including South Africa, China, Democratic Kampuchea, Democratic People's Republic of Korea, Lao People's Democratic Republic and Viet-Nam.

***Africa** — Not including South Africa.

***Asia** — Not including China, Democratic Kampuchea, Democratic People's Republic of Korea, Lao People's Democratic Republic and Viet-Nam.

***Developed countries** — Not including South Africa.

***Developing countries** — Not including China, Democratic Kampuchea, Democratic People's Republic of Korea, Lao People's Democratic Republic and Viet-Nam.

***Africa (excluding Arab States)** — Not including South Africa.

***Asia (excluding Arab States)** — Not including China, Democratic Kampuchea, Democratic People's Republic of Korea, Lao People's Democratic Republic and Viet-Nam.

In almost two-thirds of African countries, the proportion of young people who enter secondary education does not reach the threshold of 10 per cent which, specialists believe, is indispensable for autonomous development. The percentage of students in institutions of higher education is no more than 1-2 per cent in the developing countries (0.2-0.3 per cent in some parts of Africa).

Attention must also be drawn to the disharmony between the acute need for qualified personnel and the speed and nature of their training, and the disparity between limited material resources and the magnitude of the tasks on hand.

The developing countries are just as keenly aware of the problem of the content of education and of increasing its efficiency as the industrially developed countries. How to bridge the gap between an ever-rising tide of information and the amount of knowledge that schools can actually provide? This problem is bound to worsen in the developing countries since they have inherited from long years of colonialism defective, second-rate educational facilities.

In recent decades, these countries have tried in several ways to find a solution by maintaining the bases of pseudo-classical education with the addition of a few correctives inspired by the spirit of the age; by recourse to practical training in primary schools (at the expense of general subjects); by maintaining in secondary and higher education institutions a high level of training similar to that in the industrially developed countries; by radically overhauling general education in order to gear it to a future occupation, usually in farming; by splitting education into two systems, one "practical", the other "academic".

The basic problem facing the developing countries is how to find the most efficient methods of intensifying the teaching effort. This is also a central preoccupation of educators in the developed countries, and on its solution, to a large extent, hinges the future of world education.

But may there not be a way of solving all these problems at once, of cutting the Gordian knot? Some people believe that such a course is possible, and that the answer is simply... the abolition of schools.

As I discovered when I was a member of Unesco's international commission on the development of education, there is no easier way to win applause and make a reputation as an "innovator" than to boldly attack the school. The accusations levelled against schools (and against education in general) as well as the commendations they attract, always follow the same lines: education institutionalized in the school is "reactionary", "conservative", and "élitist"; the school is incapable of transmitting a corpus of knowledge to the pupil; the pupil should enjoy the same rights as the teacher, deciding what he or she wants to learn and how. For these reasons schools should be abolished, perhaps not immediately but in the not-too-distant future.

Does this old and faithful ally of humanity in the struggle to acquire knowledge, culture and education really deserve such opprobrium? Born several millennia before the Christian era, at the time of the flowering of ancient Egypt, Babylon and India, the school has satisfied human needs and all that constitutes the pride and glory of humankind has emerged from its walls. So what has happened on the eve of the twenty-first century? What arguments are advanced by the proponents of a "radical criticism" of the school?

Argument number one: the school acts as a brake on progress. School education is essentially "conservative"; it reinforces inequality between men. Its consequence is the transmission of established, tested and thus notoriously out-of-date opinions. It is in the interests of those who define the goals and content of education to make sure that others know no more than they do themselves.

Such, roughly speaking, is the case made by the "radical critics" who maintain that education is a force "that helps people to accept society as it is and to resign themselves to it." Can this point of view be upheld?

The fact that education involves the transmission from generation to generation of tried and tested opinions and experiences is no more a criterion of conservatism than the use of tried and tested medicines by the medical profession. It would be a mistake to regard as conservatism the relative stability of any kind of educational system (educational systems often possess a dynamic of their own). Admittedly, the facts and laws to be transmitted to the pupil may change, today more rapidly than ever, as the scientific and ▶

technological revolution progresses, but this dynamic of change should not be pushed to the absurd.

The experience of a soundly based educational reform, as currently being carried out by the Soviet Union, for example, shows that the inevitable, well-founded modifications in the syllabus are not an exact, point by point reflection of the scientific discoveries of today and yesterday. The nucleus of knowledge transmitted to the pupil undergoes relatively slight changes whereas modifications occur more rapidly in the envelope of information which surrounds this nucleus.

It is equally inaccurate to maintain that education is always reactionary, just as it would clearly be wrong to claim that it is always progressive. The educational system as it has emerged historically is reactionary if the social and economic principle underpinning the

## *Is school the enemy of creativity?*

society in which it functions is reactionary. Everything depends on the goals and content of education. A partial approach can only lead to confusion.

Argument number two: it is just as easy to learn in a café as at school. The theory of "incidental education", whose supporters advocate deschooling, envisages the free exchange of opinions, encounters with interesting people, freedom from interference by teachers, from the spine-chilling fear of examinations and from blinkered study programmes. "Studying" in a café and sweetening with liqueurs the bitter root of knowledge undeniably holds more appeal to some than attending school. There can be no doubt that the cinema, the street and the mass media are sources of information; there is in any case no question of underestimating their importance.

However, scientific knowledge, that is to say the presentation of what is general and essential in objects and phenomena and, *a fortiori,* of systematic knowledge, can only be communicated by means of structured teaching and above all by a soundly organized school. The goal of a school is precisely to enable each individual to learn how to learn, in other words to give him an opportunity to acquire knowledge for himself, to develop his capacities for assimilation and to stimulate the need to know and understand.

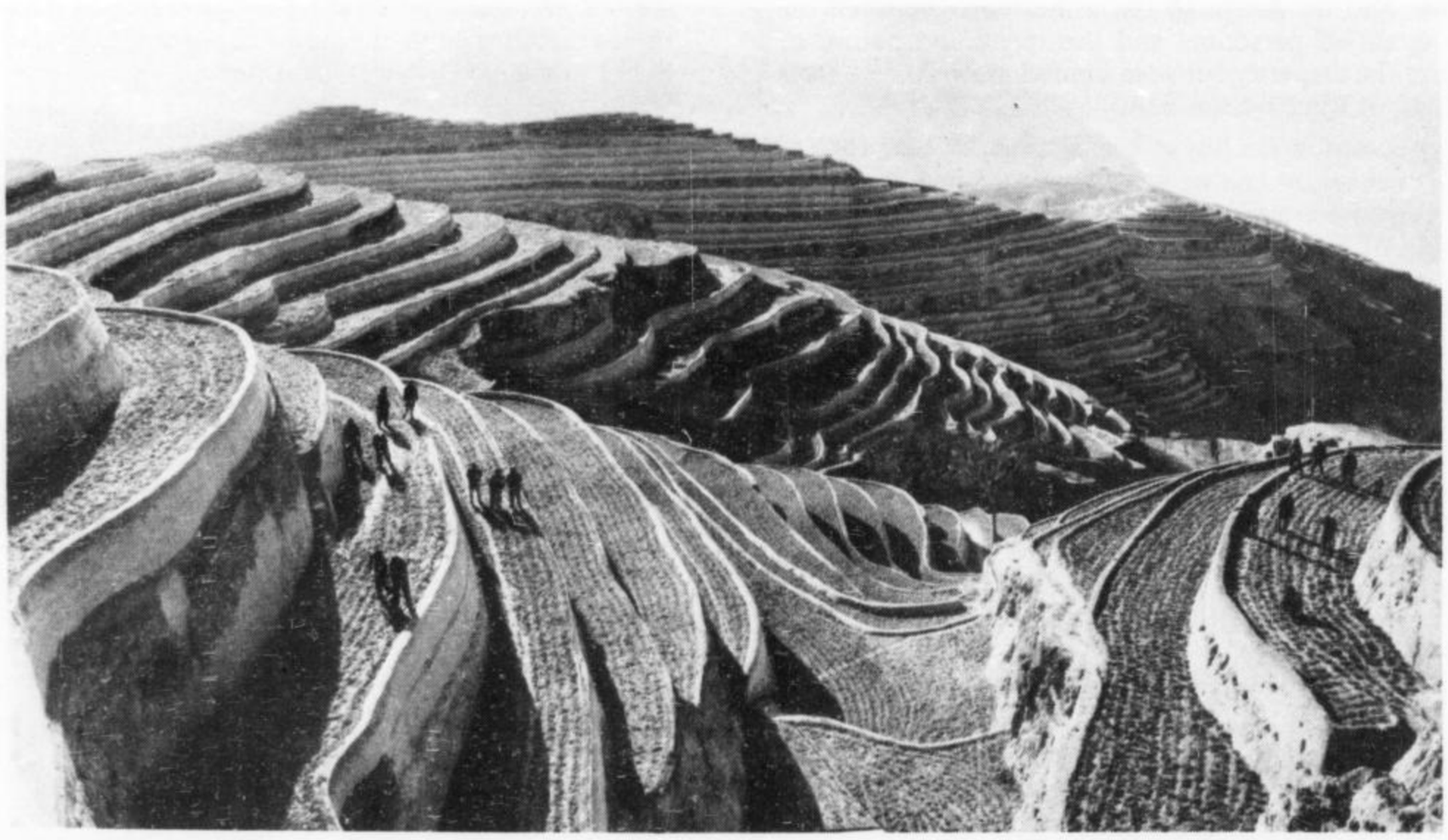
Argument number three: young people are always right. Brandishing this slightly modified version of the salesman's slogan that the customer is always right, the "radicals" claim that they are putting young people on their guard against teachers who "attach too much importance to the printed word" (i.e. books and textbooks), against systematic education which may "paralyze" the free-ranging creativity of young people, and against examinations which are "an insult" to the free expression of their personality. In practice, these "revolutionary" appeals are transformed into an irresponsible attitude on the part of teachers towards their pupils and into indifference on the part of the pupils towards their teachers.

The affirmation that "the pupil should be able to choose where, how and what subject he studies; thus education will be adapted to each individual" has the same ring as those set forth above. Undeniably each person is free to choose the general direction of his studies. But the programmes, the methods, and the textbooks imply a harmonization without which it would be impossible to create equal conditions for all. Pupils are not equal in energy and abilities, their level of education varies, and a certain individualization of education is indispensable; but this must not become, in the educational system of the future, an end in itself. The individualization of education is one of the most important aspects of the universalization of education, but it is neither an absolute nor a panacea.

Admittedly, certain types of school and certain forms of teaching are open to criticism. Many aspects of schooling call for a complete overhaul and invite reforms. However, rejection of the school as a social institution, now or in the future, would be tantamount to capitulation in the struggle for education, and would mean that we should enter the twenty-first century with the problems and difficulties bequeathed to us by the twentieth.

Like a meridian and the horizon, the line we draw between centuries and even millennia is a convention. Only what we sow here and now will bear fruit beyond that line. It is up to us to see that the harvest is good, and that it satisfies humanity's ever-growing need for universal knowledge and understanding.

■ **Arthur V. Petrovsky**



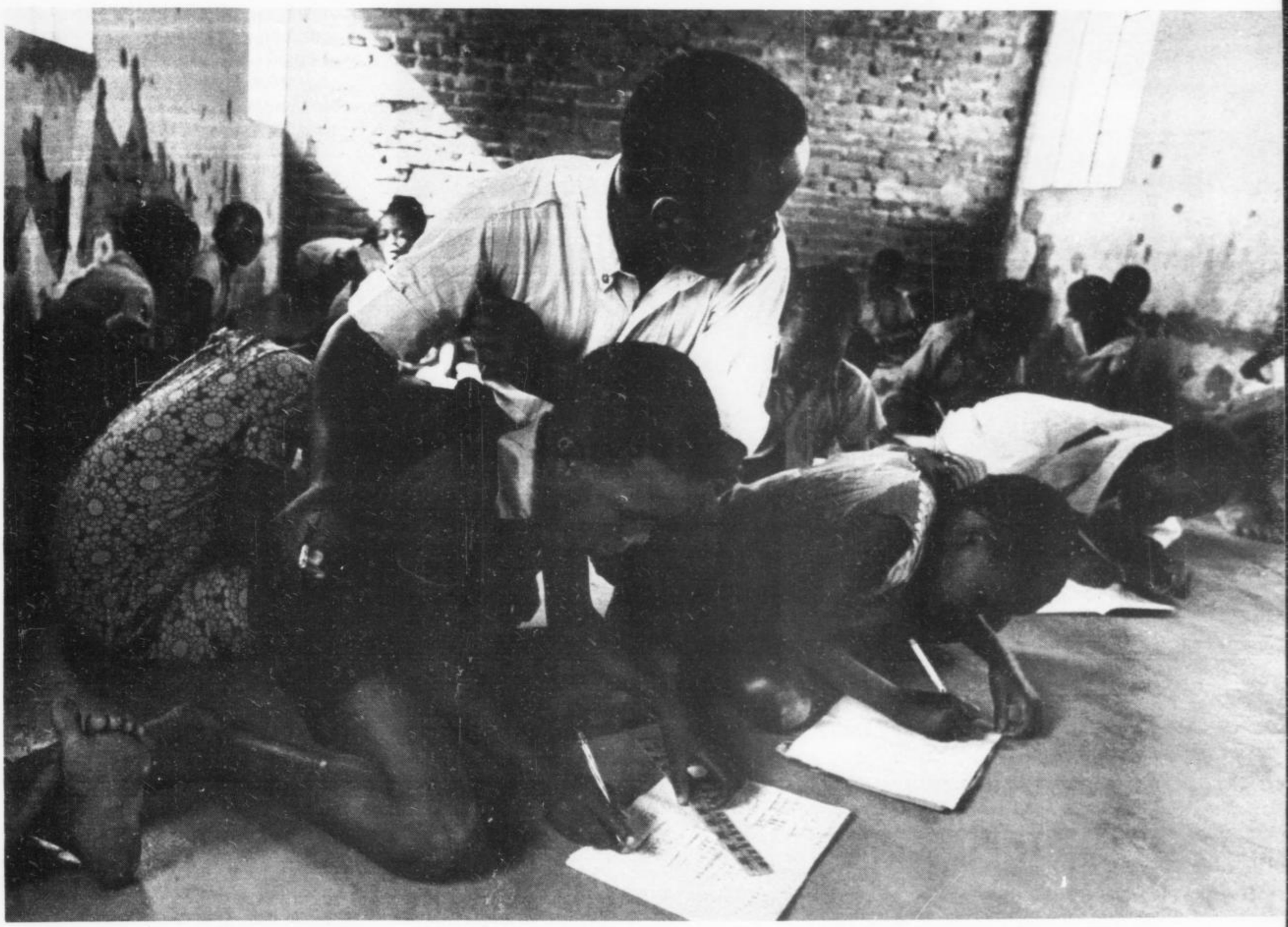
*We want to construct an economy? Then look at our peoples. Who are they? They are many, they are poor, malnourished, badly housed, sick, without education and reduced to unemployment. This must be our starting point. There can be none other.*

**Han-Sheng Lin**

**These imposing terraces were built by a production brigade in the Shansi Province of China. Photo © China Photo Service, Peking.**

# Preparing people for change

## *A testing time for modern education*



*Only the educated are free.*

**Epictetus (AD 55-135)**

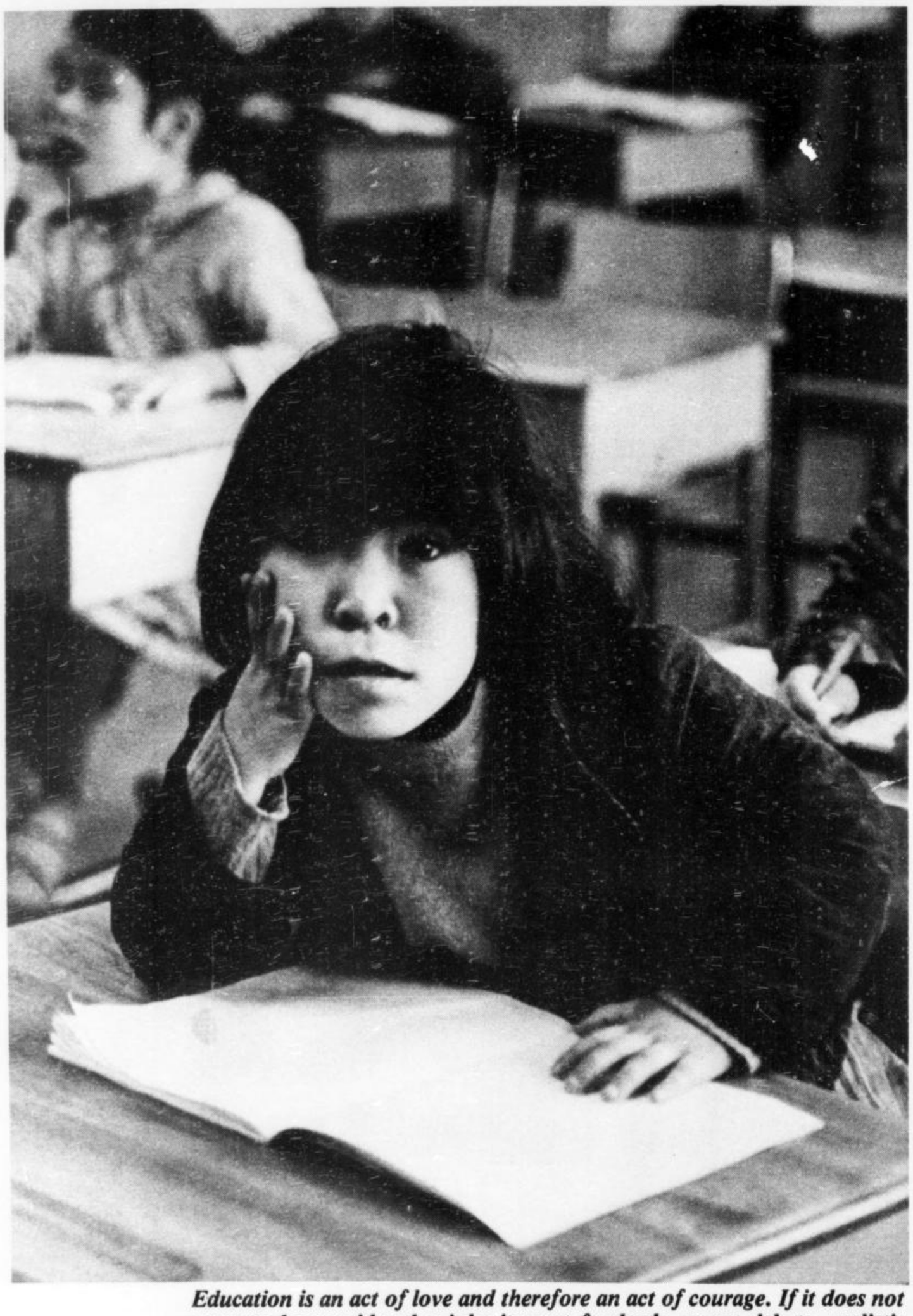
**A school in Zambia. Photo © Abisag Tüllmann, Frankfurt, Fed. Rep. of Germany.**

*TO ensure continuity in each society and to promote its renewal without detriment to its inherent genius would appear to be the essential purpose of education in its twofold functions of social reproduction and innovation: the school is the place above all others where the cultural heritage of each people can be transmitted and perpetuated, while it simultaneously paves the way for social renewal by inculcating the attitudes and aptitudes that people need in order to take part in change and to master it.*

*But the very speed of contemporary social and economic changes, the growing pace of advances in knowledge, particularly in science and technology, and their application to increasingly varied fields, the growing complexity of the different societies, and the intensification of intercultural exchanges and influences, all mean that this twofold objective presents something of a challenge.*

*One of the major features of this second half of the twentieth century is unquestionably the recognition that education is a fundamental right for individuals and a prerequisite for social progress. This universal recognition explains the unprecedented expansion of education throughout the world over the last two decades. Between 1960 and 1980, the numbers of pupils and students at the different levels of education almost doubled, rising from 327,000,000 to 648,000,000, although admittedly growth rates varied from region to region, country to country and level to level. Growth was particularly marked at the secondary and higher levels. The number of students in post-secondary education almost quadrupled, going up from under 12,500,000 to over 47,000,000. The number of secondary pupils rose by a little more than 150 per cent, from 69,000,000 in 1960 to 180,000,000 in 1980.*

*Despite the substantial advances achieved, however, the democratization of education is still, in many countries, by no means a reality. In addition to the persistence of illiteracy, which is among* ▶



*Education is an act of love and therefore an act of courage. If it does not want to be considered a joke it must fearlessly accept debate, realistic analysis and creative discussion.*

**Paulo Freire**

**A young Canadian Eskimo girl at school. Photo © Paul Almasy, Paris.**

*To see our neighbour—and everyone is now our neighbour—does not mean to know him. Just as the brain interprets the message received from the optic nerve, we must, in the same way, equip ourselves to interpret the messages received from other peoples. It has been said that racism is a pathological state of mind, a form of irrationality, a kind of epidemic. These terms imply the existence of a healthy state which can be attained and maintained in a world where different nations coexist.*

**Jean-Paul Sartre**
**(1905-1980)**

***Intervention au Havre,*** **by the French artist Ernest Pignon Ernest who exhibits his work in public places associated with violent incidents. Photo © Ernest Pignon Ernest, Paris.**

▶ *the gravest of the inequalities that afflict the modern world, there are still considerable differences in the opportunities available for access to education.*

*Inequalities weigh particularly hardly on the rural areas, even though, so far as schooling is concerned, those who live on the fringes of certain cities, the handicapped, certain minorities, migrant workers and refugees are also at a disadvantage. The same is true, in many cases, of girls and women. Despite the considerable increase in the numbers of girls and women enrolled—which, in higher education, increased fivefold between 1960 and 1980—the percentage of girls and women attending schools and universities is still, in many countries, below that of men. It drops as the level of education rises, and is in general markedly below that of the male students following scientific and technological courses.*

*By no means all levels and kinds of education have as yet been made free of*

## *The mother tongue—the* sine qua non *of education?*

*charge everywhere and, in some cases, the expansion of education has been particularly advantageous to the most prosperous sections of the population. In this respect, the limitations of the kind of egalitarianism that merely offers equality of access to all, regardless of inequalities or differences in background, are beginning to be more clearly appreciated: it is now obvious that the democratization of education cannot be interpreted in purely quantitative terms, and that its purpose must in fact be to secure the best opportunities for everyone.*

*This probably implies that special measures need to be taken to assist those who, because of their race, sex, origins or socio-cultural antecedents, are unable to take full advantage, on a footing of equality, of the education offered them. In the same connexion, efforts need to be made to relax the technical procedures for changing from one type of course or kind of education to another, thereby making it easier for students to branch out in new directions as they proceed and so ensuring that different talents can be developed in the best possible way.*

*It would also be well to endeavour to adapt the content and methods of education more closely and at the same time more flexibly to the natural, cultural and human environment in which it is provided. In the developing countries that have recently gained their independence, under the lingering influence of systems inherited from the colonial period, education still often fails to some extent to match the real situations and needs.*

*In many of those countries, the question of the language of instruction is still unsettled, even in primary school, and the use of curricula to maintain and reinforce cultural identity is an acute problem. But most industrialized or developing societies find, in varying degrees, the same difficulties in reconciling the additional demands now placed on education, which is required to open people's minds to the international environment through a better knowledge of world problems and greater insight into the values of different civilizations, while at the same time promoting deeper ties with the fabric of local life, so as to enable individuals and their communities to master their own environment and mobilize its resources.*

*Education is, in fact, by its very nature, angled towards the future, i.e. the uncertain, and the function of preparing people for change has become all the more difficult to discharge because of the extremely rapid developments taking place in modern societies and the constantly increasing complexity and diversification of their forms of organization, while there are still, for practical purposes, no effective instruments for evaluating changes and predicting developments. It is scarcely* ▶

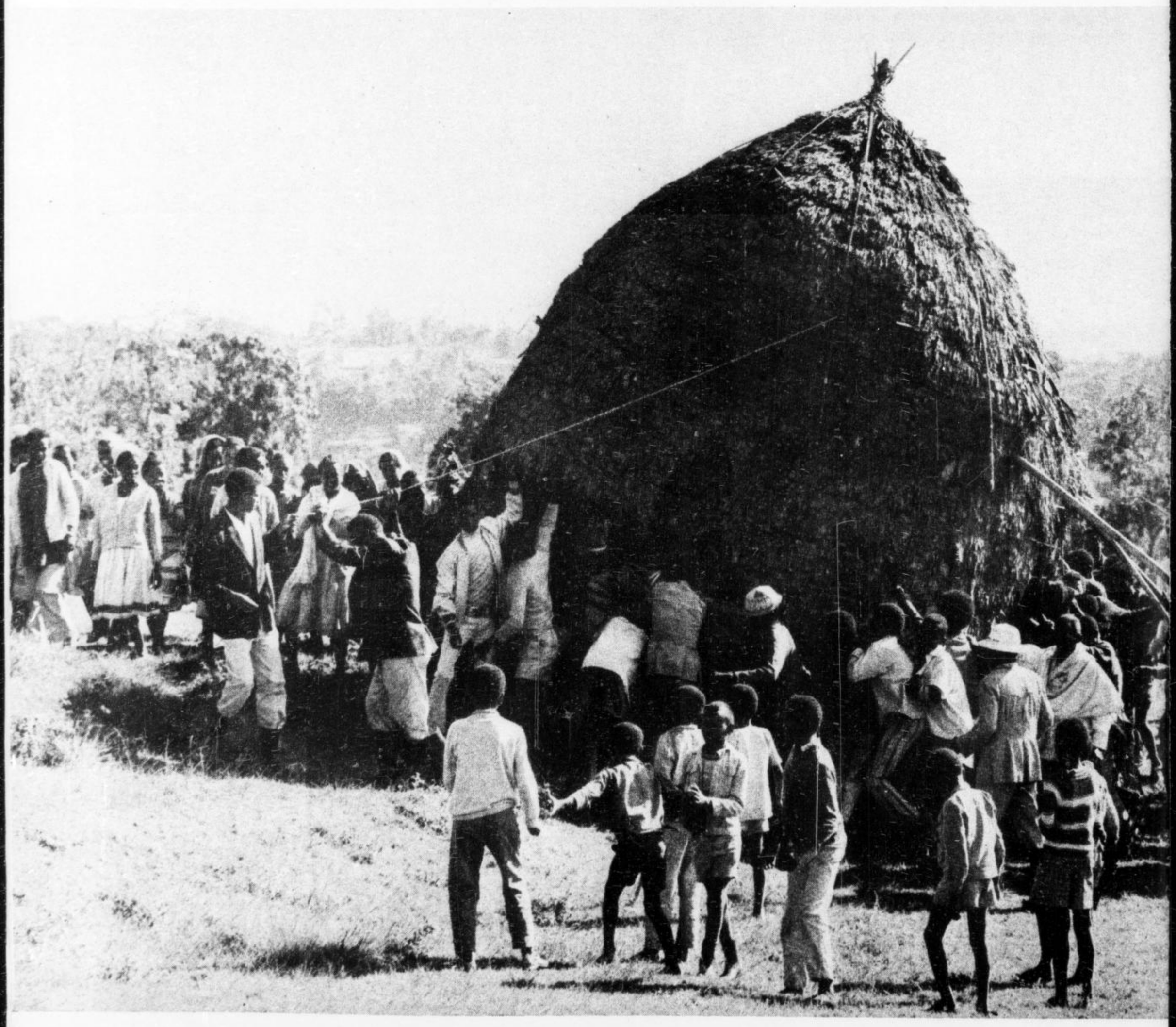
*surprising, then, that educational systems have for several decades past been severely criticized, partly on the grounds that education prepares people to live in an already outdated society.*

*This is borne out by the fact that content and curricula often lag far behind the advance of knowledge, particularly as regards science and technology teaching. In very many countries, greater emphasis should be placed on general science teaching, which should begin in primary school and continue throughout the various stages of education, so as to give pupils a thorough grasp of the principles of scientific method and instil an attitude conducive to active, critical investigation of the world around them. Technical and vocational education should likewise be developed, since it is in very many cases still inadequate, while the branches of specialization and course content offered do not always meet development needs.*

*More generally, the way in which education and vocational training are matched to employment leaves much to be desired. A case in point is higher education, where students are often distributed among the different course options with no regard for the development of society and its consequent employment needs, leading to an overabundance of skilled manpower in certain fields and a shortage in others, and creating both difficulties in obtaining work and frustrations for individuals.*

*Moreover, despite the efforts made to link education more closely with the world of work, as an essential requirement for a sound training for life, whether through better careers counselling or through a growing interpenetration of education and work, calculated to acquaint pupils, students and teachers with the realities of the productive sector, this linkage has seldom been achieved. The practical measures taken for this purpose, such as the introduction of productive work into the educational process, which is of indisputable educative value and can make a real contribution to ending the age-old dichotomy between intellectual and manual work, are encountering resistance in many countries.*

*The difficulty experienced in opening up education to the world of work is evidence of what some see as a split between schooling and life. It reflects the fact that, in very many cases, educational systems that are still too rigid to*



*respond appropriately to all the increasingly numerous, increasingly diversified and constantly changing demands made upon them by society are lagging behind what has become an extremely complex and unsettled social reality.*

*The need for freer adaptation of education to social needs, and for a finer appreciation of their probable development, is therefore making itself felt in most parts of the world.*

*This means developing the educational sciences and research in that area. It is still quite widely believed that teaching is a craft for which there is no need to call on the aid of science. It would seem that, on the contrary, the linkages and interrelations between education and society cannot be improved without constant progress in the educational sciences, as integral parts of the social sciences, and the devising of appropriate arrangements to enable their findings to be taken more fully and more swiftly into account in educational practice.*

*It further seems to be increasingly clear that initial teacher training is not in itself enough. Teachers' knowledge must be regularly and systematically updated in order to cope with the development of knowledge and meet the needs of social change. Hence lifelong education appears to be an essential facet of the teacher's profession.*

*From the standpoint of lifelong education itself, considered not as further vocational training but rather as an overall process of education, starting with the earliest stage and continuing throughout life, the development of in-*

## *Is there a split between school and society?*

*formal and non-formal types of education, and better co-ordination between them and the formal systems, also seem to meet the wish to bring about greater interpenetration between education and society as a whole. This would make for that diversification of the content, methods, structures and levels of education and training required by the modern world.*

*Another point is that the efforts and resources of every kind invested in education are now on such a substantial scale that it seems difficult to increase—and for some countries, even to maintain—their present level; the financial and human cost represented in many countries by excessive repeating of grades and dropping out, particularly in higher education, is a source of keen anxiety. It therefore appears more than ever necessary not only to improve school and university counselling but to tap for the benefit of all the whole educational potential of society, if it is true that in view of the limitations on natural resources and the slippages of growth, the future of the nations will in the coming years depend on how well they can mobilize and make use of the human resources at their disposal.*

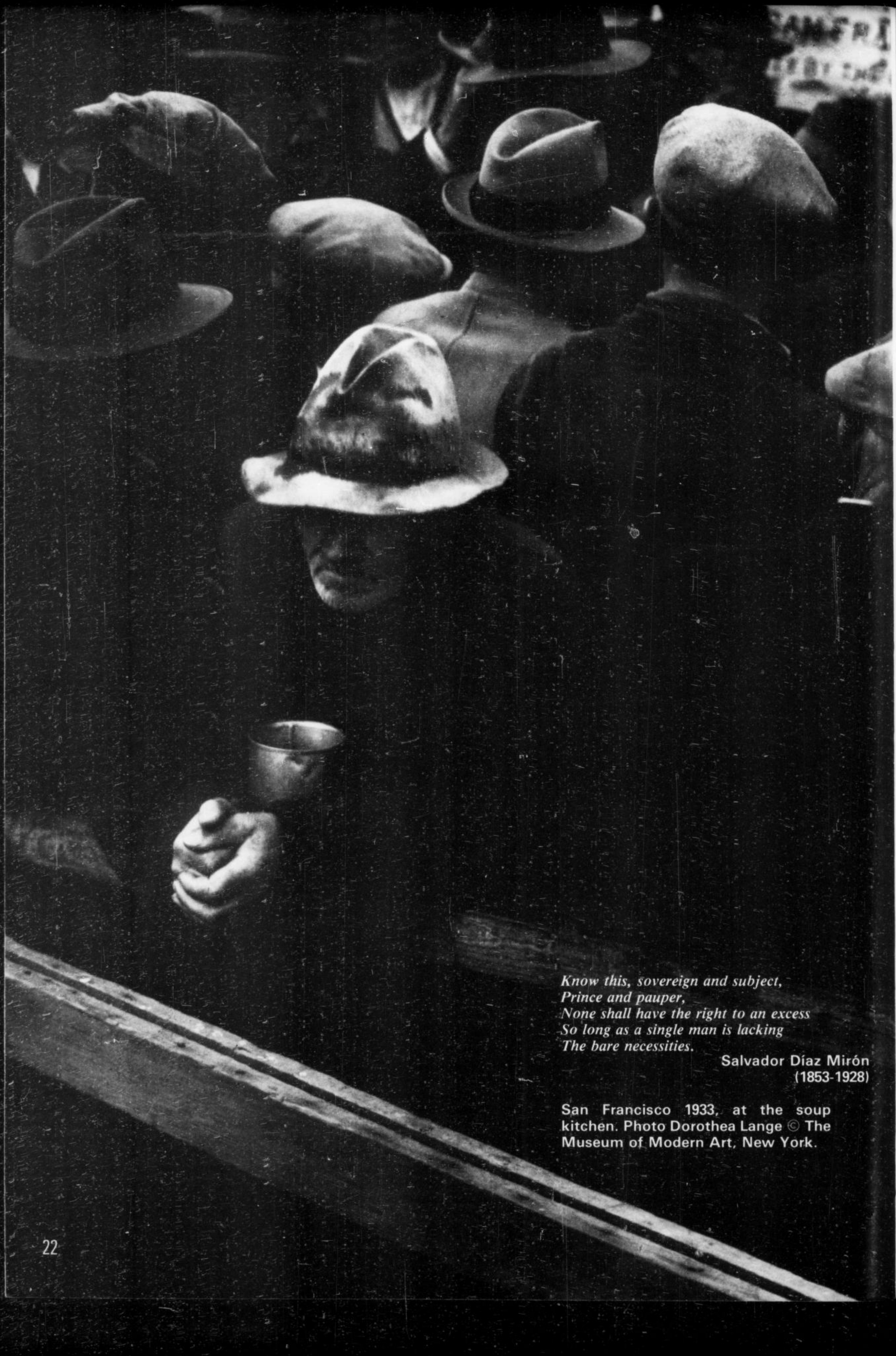
*To that end, and having regard to the uncertainties and difficulties inherent in any attempt to peer into the future, it is reasonable to think that the best preparation for this as yet indeterminate world to come is a kind of education that endeavours to marshal all capacities for initiative and creativity, individual and collective, so as to prepare the way for communities themselves to take charge of their own development. In this respect, an especially apt approach is to organize learning as a process whereby the pupil follows for himself the paths of the historical and methodological development of scientific, technological, philosophical or artistic creation. Seen thus, the act of learning becomes an act of re-creation and as such the basis of all creativity.*

*But while education must aim for the all-round development of the individual, bestowing on him a fuller control over his environment and helping him to develop his specific talents and aptitudes, it must also foster, from the very earliest years, attitudes of tolerance, justice and solidarity. At a time when much of mankind is experiencing a renewed and explosive upsurge of violence in various forms, and while flagrant violations of human rights continue, there is a widely felt need to give civic and moral education, or give them back, their rightful place. But such education poses a problem in a certain number of countries where a gap has opened up between morality as taught and what is actually practised in the family and in society. Education should therefore endeavour, in the coming years, to foster the emergence of attitudes and values corresponding to the realities, demands and aspirations of a changing society.* ■

*To accomplish great things one must be with men, not above them.*

**Montesquieu**
**(1689-1755)**

**Moving a Dorze style house, Ethiopia. Photo Georg Gerster**
**© Rapho, Paris.**



*Know this, sovereign and subject,*
*Prince and pauper,*
*None shall have the right to an excess*
*So long as a single man is lacking*
*The bare necessities.*

Salvador Díaz Mirón
(1853-1928)

San Francisco 1933, at the soup kitchen. Photo Dorothea Lange © The Museum of Modern Art, New York.

# HUNGER, POPULATION ENVIRONMENT

**HUNGER and malnutrition claim millions of victims in the Third World every year, exacting a grim toll of deaths, disease and deficiencies. Undernourishment (less than 2,000 calories a day) affects 28 per cent of the population in Asia, 25 per cent in Africa, and 13 per cent in Latin America. According to recent statistics, 17 million children under five die each year, most of them in developing countries. Fifteen million could be saved if they had access to food supplies and hygiene facilities available in the developed countries. How can our all-conquering technological civilization permit the existence of this scandalous situation which Unesco Director-General Amadou-Mahtar M'Bow has denounced as "an intolerable situation with which history confronts mankind"? Scandal is the word if only because world cereal reserves are enough to provide everyone with 3,000 calories and 65 grammes of protein per day, in other words more than the minimum necessary for a normal life. Why does this situation persist? For one thing because 43 per cent of these reserves are used as animal food (mainly to satisfy over-consumption of animal protein in the rich countries). Meanwhile many countries with a hunger problem are actually exporting large amounts of food to feed animals and people in the rich countries where overnutrition is a health problem.**

**What is the justification for a model of development which leads to extremes of overconsumption by a rich minority and drags Third World peoples deeper into a morass of poverty and marginalization, at the cost of environmental degradation? Is it not true that our planet has enough resources to satisfy everyone's need but not everyone's greed? What steps should be taken to meet the needs of over 6 billion persons who according to United Nations projections will populate the planet in the year 2000? The immense majority of them will be in the Third World which the current system of development and international relations already prevents from feeding itself adequately.**

# For an alternative development

## *Balanced economic growth will be impossible without environmental protection*

***by Anil Agarwal***

IF there is anything that can be said with certainty about environmental and development problems it is that they worsened considerably throughout the Third World during the 1970s.

The United Nations estimates that nearly half a billion people go to bed seriously malnourished—literally half-starved—at the end of every day. Many millions of these people are children. Any disease that attacks them in this condition, and there are many diseases going around, takes a heavy toll. During the 1970s, for example, diarrhoea caused by lack of clean drinking water and sanitation continued to kill at least 16,000 children in the Third World every day. Yet diarrhoea seldom kills unless the child also happens to be a victim of inadequate nutrition.

The changing environment is also resulting in the increased incidence of many diseases. The rapid spread of schistosomiasis in several North African countries is now very well known. Lesser known is the spread of the killer disease Japanese encephalitis from Japan to India. Japanese encephalitis is a brain fever that kills almost every second person who is unfortunate enough to get it. The disease has spread slowly with the growth of surface irrigation systems which provide an excellent breeding ground for the disease-spreading mosquito. Provision of drinking water and various types of construction activities without adequate drainage have led to a dramatic surge in filariasis in several countries. The increase in malaria cases with the growth in vector resistance against pesticides is also now well documented.

As if this were not enough, many developing countries are now acquiring a double burden of disease: the traditional water- and mosquito-borne diseases together with what are generally regarded as diseases of affluence. With uncontrolled industrialization and increasing use of chemicals in both agriculture and industry, cancer is becoming an important disease in the Third World. The World Health Organization estimates that, of the eight million cancer cases in the world, five million are in the developing countries. With cigarette consumption growing in the Third World, a commerciogenic epidemic of cancer can be expected well before the end of the century. At their current expenditure of a few dollars per head on health services, developing countries will have neither the manpower nor the financial resources to provide the necessary therapeutic facilities.

The environment, too, has been slowly worsening. Every minute 20 hectares of tropical forest cover is destroyed—about one per cent of the total forest cover in the ▶

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**ANIL AGARWAL,** *Indian author and journalist specializing in development questions, is Director of the Centre for Science and Environment, in New Delhi. Among his published works are* Drugs and the Third World *(1978) and* Mud, Mud: The Potential of Earth-based Building Materials for Housing Programmes in the Third World *(1981)*

▶world every year. As much land is lost to salinity and waterlogging as comes under irrigation every year. In most countries of the Third World, air and water pollution are becoming increasingly worse whereas in many developed countries, governments with greater access to financial resources have initiated schemes and enforced standards that have reversed the trend.

Across the Third World today, there is growing disenchantment with the existing development process. This is reflected in a growing concern about the environment too, in marked contrast to the fears that developing countries exhibited at the mammoth Stockholm conference on the human environment which first raised environmental consciousness on a worldwide scale.

Experts then argued that there would be conflicts between environmental preservation and the process of economic development and that concern for the environment would retard the latter. Today many recognize this debate to be an entirely fallacious one. The demand for an alternative development process is growing and experience now clearly shows that rational, balanced, equitable economic development will be impossible without environmental protection. Environmental degradation inevitably leads to greater inequalities in which the poorest sections of the society suffer most.

The rationale for this line of argument is pretty simple and straightforward. In a Third World society with a high population density and high levels of poverty, virtually every ecological niche is utilized by some cultural or occupational group for its sustenance. When the more powerful forces in the society destroy that ecological niche or allocate its resources for some other use, the dispossessed group obviously suffers.

All over the Third World this process is repeating itself *ad nauseam.* Take a few examples. For years, traditional marine fishermen have sustained themselves on the fishery resources available near the coast. With the introduction of mechanized vessels and trawlers, these resources are being overfished all over Asia. The losers in the process are the small fishermen who have lived for centuries in harmony with their environment.

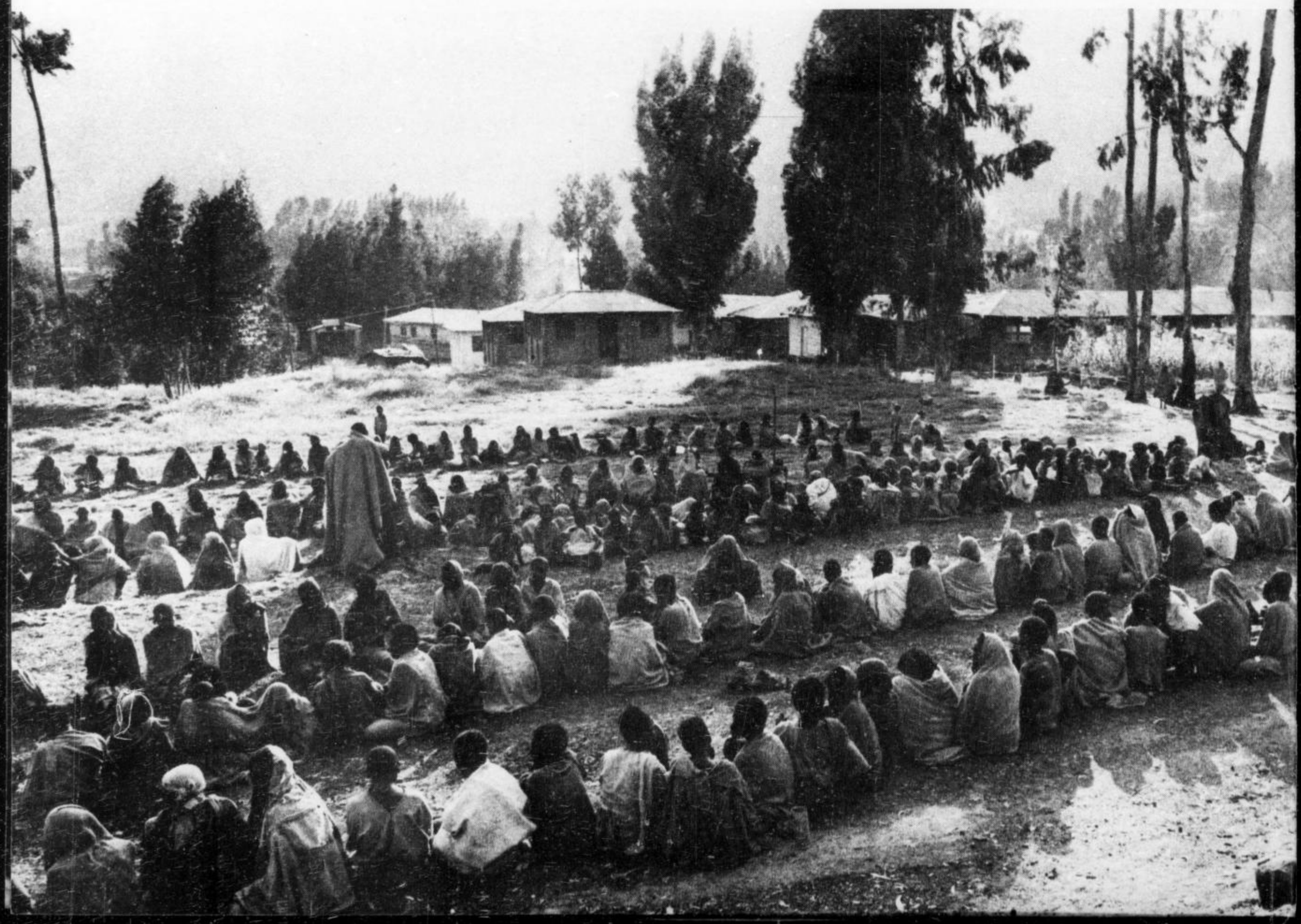
## *Environmental degradation—who are the culprits, the élite or the poor?*

Third World forests are being destroyed in a big way to meet the demand for industrial timber, both for local urban and international markets. In this process, the forest-dependent indigenous peoples of the world are being destroyed at the rate of one tribe a year. The destruction of the forests completely disrupts their age-old lifestyle. Even where afforestation is taking place, it is useless for them. Monocultures of commercial species do not provide them with the fruits, roots and tubers that traditionally met their needs.

A similar process is affecting the nomadic people of the Third World. With cultivable land in short supply, the more powerful sedentary peoples, supported by their governments, have moved in and occupied the marginal lands that were formerly the nomad's grazing lands. Pushed out of their traditional territories, the nomads are being forced on to even more marginal lands, where these exist. Otherwise they simply crowd together into the ever-diminishing areas of grazing land that are left. In the process, both the nomads and the land are suffering immensely.

The world's rivers have been used for centuries as sources of drinking water and for sustaining substantial populations of riverine fishermen. But with unregulated industrialization and urbanization, these rivers have become cheap dumping grounds for chemical and microbiological filth. Inland fisheries in many parts of the Third World have disappeared totally and those who continue to depend on the untreated waters of these rivers for drinking purposes suffer high mortality rates.

This process of marginalization and growing poverty on the one hand and greater control over resources associated with unprecedented levels of material affluence on the other, is going on all over the world. A high consumption culture, characterized by Western life styles, is pervading even the Third World. But because of its high cost and heavy resource use it remains restricted



to a small section of its population.

Almost all the Third World's environment and development problems can be traced to this cultural process. The current patterns of economic development have initiated this "multinationalization" of culture and now that this culture has been set in motion, it demands with increasing force the continuation of the same pattern of economic development. Even those who do not now benefit from this culture keep hoping that someday they will. Today there is no freedom to choose. A kind of vicious circle is operating. Multinational corporations sell the kind of products that initiate a multinational culture, and once this culture begins to seep in and be enjoyed by the powerful, they demand even more strongly the products of multinational corporations. To keep this vicious circle going everything is attacked and degraded, nothing is exempt, from forests, rivers and whales to the mass of human beings and human cultures.

Some naive experts and politicians have argued that environmental problems can be arrested if the basic needs of the poor can somehow be met. Global environmental problems can in almost every case be traced to the overconsumption of the rich, not the underconsumption of the poor. These experts betray total lack of understanding of the problem of poverty. Many of those who are poor today were not poor a century ago and then lived in close harmony with nature.

*Give me a lever long enough and a fulcrum strong enough and single-handed I can move the world.*

**Archimedes (287-212 BC)**

**Gabra tribesmen building an access road, Kenya. Photo Richard Saunders © ICA, Washington, D.C.**

*Our blood must burn*
*We must catch fire*
*If we are to move the onlookers*
*If the world is at last to open its eyes*
*Not on our remains*
*But on the wounds of the survivors*

**Kateb Yacine**

**The breadline—waiting for the daily ration of bread at Dessie relief camp, Ethiopia (1966). Photo Brian Aris © Parimage, Paris.**

Moreover, the very definition of "development" has been completely distorted. Instead of defining development as a *process* which enables individuals, communities and nations, in fact, all levels of society, to become increasingly self-reliant, with greater control over their destinies, development is now defined almost as if it were some kind of product that can be obtained with economic growth. Development cannot simply be equated with increased consumption and production of material goods in society, yet this is the operational definition of development that prevails all over the world. It clearly smacks of the very consumer culture that it is creating.

If the definition of development as a process towards greater self-reliance at all levels of society, including individual and community, is accepted, then the so-called developed countries have "underdeveloped" at a more rapid pace—their demands having far outgrown the resources of their environment—than developing countries and they are now spreading an economic process that is underdeveloping the Third World too.

A remarkable facet of past cultures which ▶

*There are two types of poverty: that which, in certain societies affects only a minority, and that which, in other societies, affects all but a minority.*

**J.K. Galbraith**

***Child in the City,*** **photo-portrait by Josef Pokorny, Czechoslovakia. International photographic contest, UNO.**

▶ lived in harmony with their environment was that they were totally dependent for their daily needs on their immediate environment. Today the so-called developed human beings know less about their immediate environment and are more dependent on products from afar. This trend has gone so far as to disrupt even such intimate biological behaviour as breast-feeding and to make the mother dependent on multinational milk powder that is imported from other nations.

As the driving force of the current culture is a system that wants to extract the maximum from the environment for a few, the growing world crisis can only be controlled if the current culture can be destroyed and replaced by a new world economic environment that allows a multiplicity of cultures to coexist in a spirit of equality. Everything else would be a façade, part of an effort to postpone the real solution. Some would even call it a deliberate trick. A culture that does not care for human beings cannot care for the environment or vice versa.

The 60-odd non-governmental groups which met recently in Nairobi to attend the Symposium on Environment and the Future were remarkably unanimous in their agreement, despite their diversity of backgrounds and experiences, that the major intellectual challenge before the world today is to delineate an alternative development process. A new vision must emerge and with it a way to turn it into reality.

Within the intellectual cloud that exists, some elements of the new culture can already be discerned. It will clearly be:

- participatory and resource-sharing, frugal when compared to the affluent sections of the world but with a higher average standard of living for the poor majority;
- respectful of the multiplicity of lifestyles in the world;
- more self-reliant and independent;
- respectful of feminist concerns; more and more evidence now shows that women suffer more from ill health and malnutrition and care more for the restoration of environmental integrity than their cash-hungry men.

As we approach the end of the twentieth century, the urgency for finding the alternative development process will increase. If the world cannot find a better way to share its resources, the fight between the poor and the rich will inevitably increase, both between and within nations. The current crisis of the Third World is merely a symptom of the crisis in the entire world.

Nearly seven decades ago, the wise old man of India, Mahatma Gandhi, put the entire population, resources and development question into one succinct and simple equation. When asked what he wanted India to look like after it became independent—whether he wanted it to be like Britain, the Mahatma replied with a question of his own. If Britain had to exploit half the world to be what it is today, how many worlds would India have to exploit ? This is a question that every developed and developing nation has to ask today. There is enough for everybody's need in this world but not enough for everybody's greed.

■ **Anil Agarwal**

# Environment and the global underclass

## *40,000 preventable child deaths each day*

### *by Erik Eckholm*

**The United Nations Conference on the Human Environment, held in Stockholm in 1972, provided a focal point for the gathering environmental concerns of the 1960s; it gave birth to the United Nations Environment Programme (UNEP) to act as a catalyst and as "the environmental conscience of the UN system". Ten years later, in Nairobi, from 10 to 18 May, the Governing Council of UNEP held a meeting to commemorate Stockholm and to take stock of the achievements of a decade.**

THE convergence of ideas about environment and Third World development over the last decade must be reckoned a historic advance for both fields. In the past those concerned about the preservation of nature and those concerned about economic progress have often been at loggerheads. Recently, many on both sides have begun to realize that they need the insights of each other if the goals of either are to be met.

The world conservation movement has for the most part focused on the need to protect endangered animals and to establish parks and preserves. But an animal cannot be saved apart from its habitat, and natural areas cannot last as fortress islands in seas of hungry people. Where large numbers lack a means to make a decent living, some are sure to invade national parks to grow food and cut wood. Desperately poor people cannot afford to worry much about what they see as useless tigers.

Instead of dwelling on the threat to the environment posed by development, many conservationists now recognize the need for development as a prerequisite of successful conservation. But not just any sort of pell-mell, lopsided development; the key is economic progress that is ecologically sustainable and satisfies the essential needs of the underclass. Analysis of Third World conservation problems leads inescapably to concern for social justice. Broader sharing of the fruits of development is important not only because it is morally right, but also because it is crucial to the protection of natural systems.

The deterioration of natural systems in poor countries is at once a symptom and a cause of the extreme misery in which hundreds of millions live. The struggle to preserve global environmental quality is unavoidably intertwined with the struggle to improve the lot of the global underclass—the landless rural residents, the urban slum dwellers, and the tribal minorities who are the poorest of the world's poor. Roughly half this underclass lives in the three South Asian countries of India, Bangladesh, and Pakistan. Large numbers live elsewhere in Asia, especially Indonesia, and in sub-Saharan Africa, with the remainder scattered among countries in the Middle East, Latin America, and the Caribbean.

Struggling week by week to survive, caught in endless cycles of hunger, illiteracy, exploitation, and disease, the absolute poor have little time to worry about global environmental trends. Yet in many ways they are more deeply affected by environmental quality than are the affluent. Most of the rural poor live directly off the soils, forests, waters, and wildlife whose deterioration has become the object of so much international concern. Many are forced by circumstances beyond their control to destroy the very resources from which they must scrape their living. In the cities, the poor live in filth and are often the prime victims of industry's pollution, too.

Undernutrition is chronic among the underclass. In the mid-1970s, according to United Nations estimates, more than 400 million people — one-tenth of ▶

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**ERIK P. ECKHOLM** *is a specialist on environment and development issues who has served as a consultant to United Nations agencies, as a U.S. government official and as a Senior Researcher with Worldwatch Institute in Washington, D.C. This article is adapted from his new book* Down to Earth: Environment and Human Needs, *published by W.W. Norton in New York and Pluto Press in London. His previous books,* Losing Ground *and* The Picture of Health, *have appeared in ten languages.*

▶humanity—consumed less than the "minimum critical diet" below which health may be endangered. The ill effects of undernourishment are often nearly invisible. Outside of famine zones and refugee camps, overt starvation is uncommon. But chronic undernutrition can mean chronic health problems, a higher chance of death from disease at any age, heightened odds of mortality for mothers during childbirth and for their babies, and a reduced capacity for work. Routine diseases such as diarrhoea and measles are, among the undernourished, routine killers.

Most of the world's absolute poor live in rural areas, and most of them are either landless labourers or people who lack secure access to enough farmland to support themselves at a decent level.

Landless labourers, sharecroppers, and marginal farmers together constitute the majority of rural residents in

***In preserving 'useless' species, are conservationists barking up the wrong tree?***

most countries of Asia and Latin America, and they are rising in number in Africa, where land inadequacy has only recently begun to emerge as a major problem. These people, the dispossessed of the earth, have generally been bypassed by economic development and in some cases have been harmed by it.

Lacking land or jobs in traditional farming areas, peasant farmers clear and plant lands that should never be farmed. They move into rain forests, destroying diverse ecosystems in what often turn out to be futile attempts at sustainable farming. Sometimes within sight of huge, under-utilized agricultural estates in valley floors, desperate farmers in South and Central America plough up mountain slopes so steep that the topsoil washes away within a year or two.

In semi-arid zones of Africa and Asia, land-hungry farmers plant in low-rainfall zones, which turn into dust bowls when the inevitable drought comes. Meanwhile, herders are squeezed into ever more restricted areas and the problem of overgrazing is intensified. The emerging inadequacy of the land base in relation to population and technology is often partly concealed by a steady decline in the soil-preserving fallow period.

The rural landless have their counterparts in the slums and shantytowns of Third World cities. With the old slums overflowing, huge numbers of people become squatters on vacant land or buy illegally subdivided plots and build their own dwellings—anything from tarpaper shanties to sturdy and livable structures. The most disadvantaged

***We, the people, are like a saucepan; all the food is cooked in the saucepan, it suffers the torments of the fire, but when the food is ready, it is told: you cannot come to the table, you will make the cloth dirty.***

**Jacques Roumain**
**(1907-1944)**

**Preparing the family meal, India. Photo © Claude Sauvageot, Paris.**

people tend to wind up on dangerously steep hillsides or in flood zones, where natural hazards join overcrowding and lack of sanitation to endanger health. Because they live in illegal areas, squatters are seldom served by convenient water connexions, let alone sewage-disposal facilities or garbage collection. In many cities they pay exorbitant rates for water that is carted in by private vendors, and thus end up paying more per unit for this basic need than do the rich. They are often victimized by severe air pollution and water-borne toxic chemicals—the effluents of others' affluence.

More than half the population of the developing countries (excluding China) lacks ready access to safe water supplies and waste disposal facilities. The resultant poor sanitation combines with undernutrition to take an awesome toll, especially among the babies of the underclass.

Altogether, according to the World Health Organization, about seventeen million infants and children under age five died each year in the late 1970s. If the excellent health conditions of Northern Europe had prevailed throughout the world, only two million such deaths would have occurred. Hence fifteen million deaths of babies and small children—more than forty thousand a day—can be regarded as preventable. All other global health problems pale before this one. Yet because they are so commonplace these forty thousand daily scandals do not provoke the global outrage they should.

***Are the poor doomed to destroy the environment that sustains them?***

Some planners and aid agencies have at last begun to incorporate an ecological perspective into development activities. But solving the interlocking crises of poverty and environmental degradation depends as much on politically contentious socio-economic reforms as on improved planning.

More than anything else, the stone wall of inopportunity facing the poorest fifth of humankind ensures the continuing degradation of natural resources in large parts of the world. In the absence of national and international economic reforms, efforts to protect wildlife and forests, to manage watersheds and arid lands, to clean up shantytowns and waterways, cannot be fully successful. Nor is population growth apt to slow down quickly among people whose children so frequently die. The worldwide struggle to preserve a livable environment must be part of the broader struggle to create a more just global society.

■ Erik Eckholm

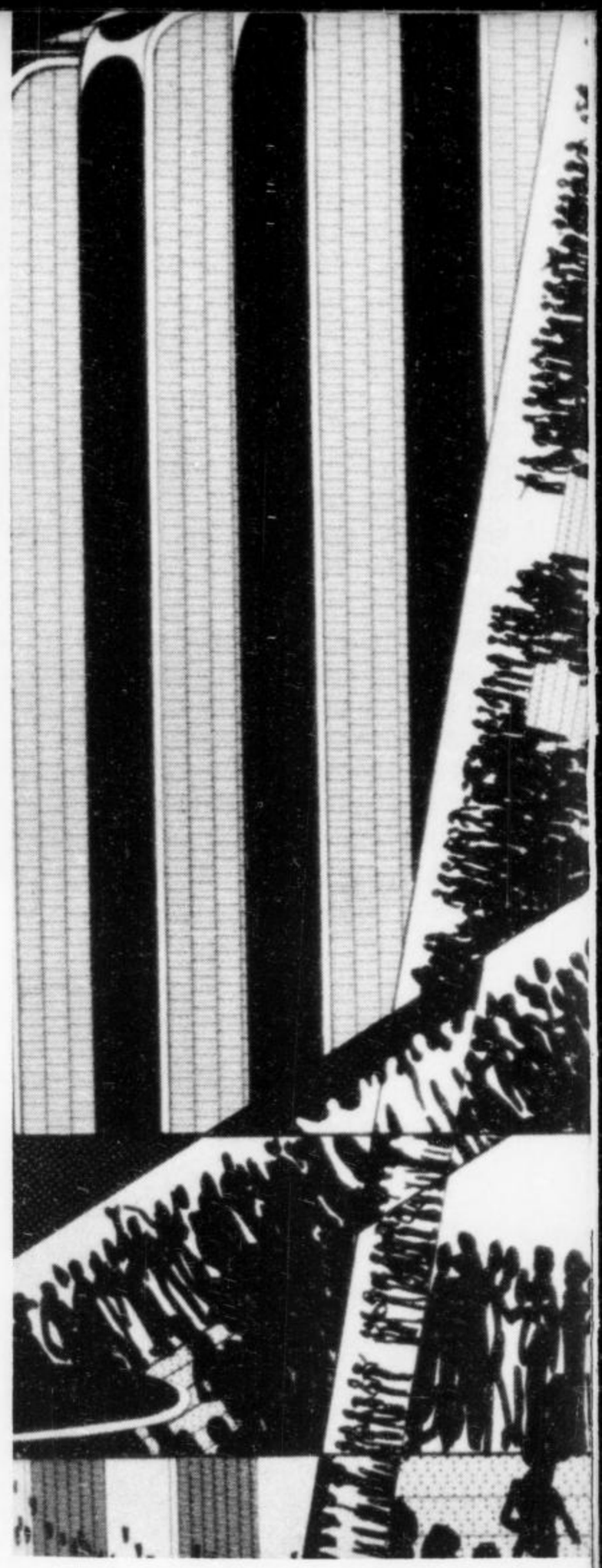
*He who declares that he has the courage to withstand hunger has never experienced it.*

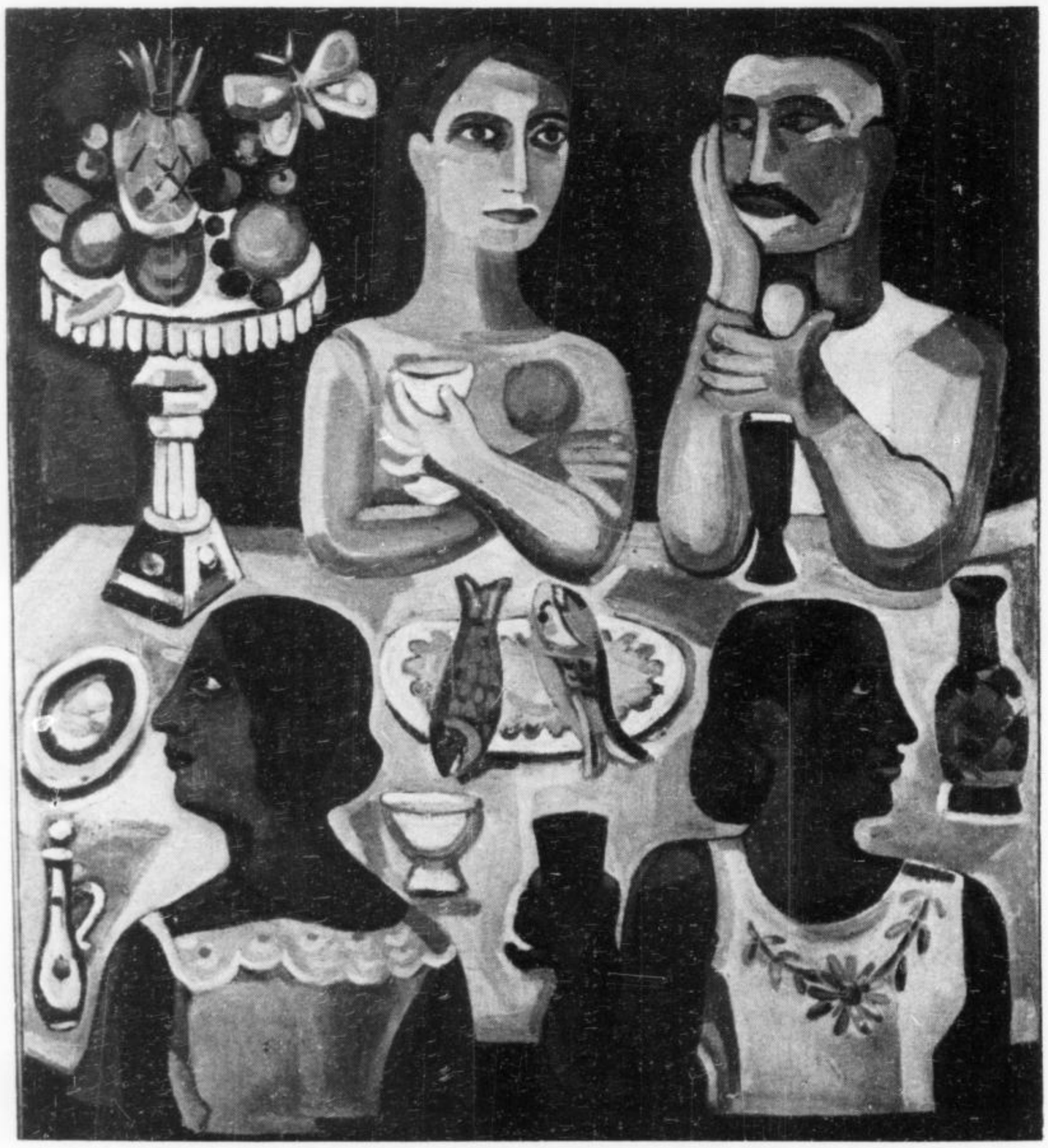
**The Book of Negro Wisdom**

**A canteen at Bihar, India. Photo © Claude Sauvageot, Paris.**

# The aftermath of the population explosion

***By the year 2000, a world population 40 per cent higher than today***



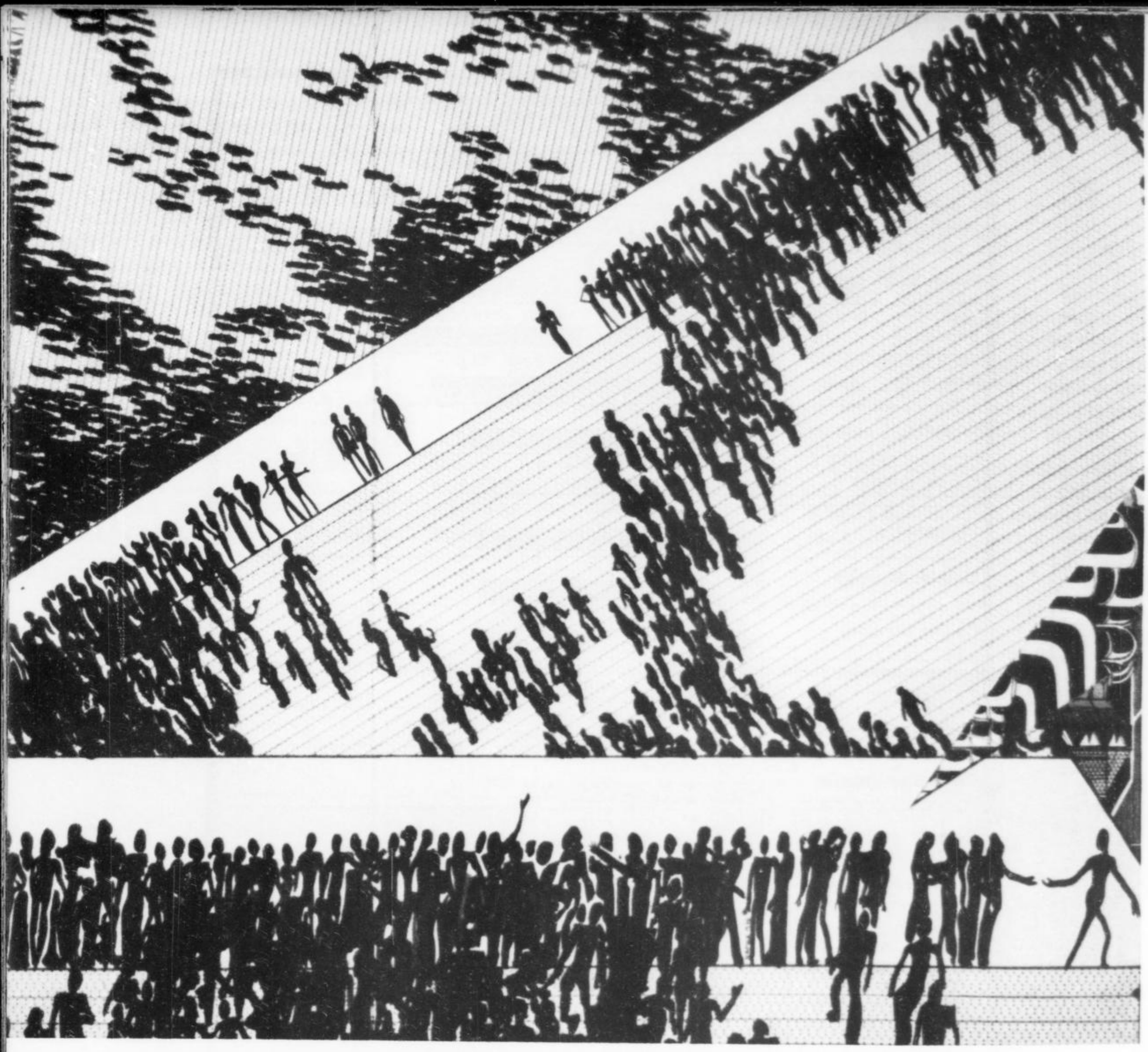


*by Rafael M. Salas*

*On every contented, happy man's doorstep there should be someone with a hammer in his hand, who would keep reminding the happy man by his knocking that there are unhappy people in the world, and that, however happy he may be sooner or later life will show him its talons and misfortune will befall him, in the form of sickness, poverty or loss, and no one will see him or hear him, just as today he neither hears nor sees others.*

**Anton Chekhov**
**(1860-1904)**

*La Cena* (1941), by the Cuban artist René Portocarrero. Photo © Almasy, Paris.



*Men make a city, not its walls or its ships.*

**Thucydides**
**(460-399 BC)**

**City crowds. Photomontage © Richard Napier, Paris.**

THE largest and most complete memory bank on the past, present and future of the world's population stands on the East River in New York. Here the United Nations Population Division stores and analyses information on population size, growth and movement from nearly every country in the world. Year by year its records show the way we have come and the way we are likely to go. Out of the figures of the past is constructed a picture of the possible future.

If conditions had remained as they were in the 1950s the picture of the future would have shown birth rates stable and death rates falling, as they had been for some years. In these conditions the population of the world would have increased very rapidly, reaching 7,500 million by the year 2000 (it was 2,500 million in 1950). By far the greatest part of the increase would have come in the less developed countries of the world.

As these possibilities, and others even more daunting, became more widely known during the 1950s, concern grew and the idea of the "population explosion" was born. It is at least partly to this concern that the United Nations Fund for Population Activities owes its existence.

Death rates continued to fall in the 1960s—that is to say as chances of survival improved and expectation of life became longer under the impact of better health care and understanding of how the most common killer diseases could be controlled. But birth rates also began to fall in the 1960s, even though conditions in most countries were apparently unfavourable. The pace of decline was slow at first, but became faster and faster until in the mid-1970s it was twice what it had been a decade before. ▶

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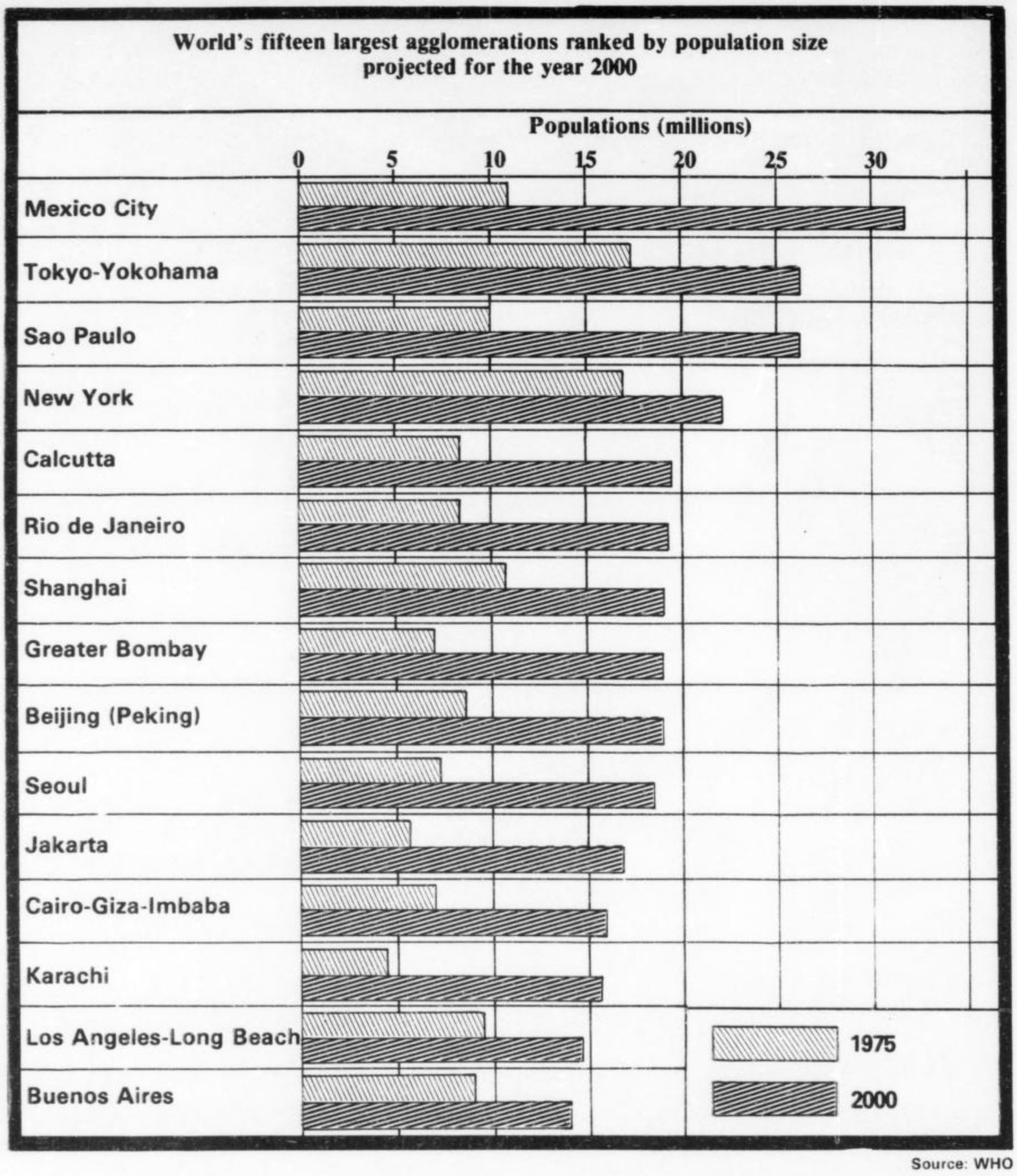
**RAFAEL M. SALAS,** *of the Philippines, is an Under-Secretary-General of the United Nations and Executive Director of the United Nations Fund for Population Activities, which he has headed since it became operational in 1969. A graduate of the universities of the Philippines and Harvard, he has served as a Minister and occupied other high-level posts in the Philippine Government.*




Source: WHO

▶ By the end of the 1970s it was clear that the gigantic numbers and cancerous rates of growth which seemed likely only a few years before would not after all afflict the earth. This year, the UNFPA's *State of World Population Report* was able to say that the population at the end of the century would most likely be of the order of 6,100 million people—1,400 million, or twenty per cent fewer than would have been expected in projections based on 1950s data.

This is good news; but as the dust of the population explosion settles, our perception of the true position becomes clearer. It now seems likely that by the end of the century the earth will be called upon to support a population forty per cent bigger than it is now. This alone should renew a sense of urgency in meeting the needs of this and future additions to the world's people.

Growth has not stopped, nor will it stop finally until well into the century after next, by which time there may be 10,500 million people on our planet. We must find ways of accommodating the needs of these vastly increased numbers; and it should be remembered what difficulties are found in meeting the needs of even the present population of the world. Whatever the capabilities of technology or the theoretical carrying capacity of the global ecosystem, the fact remains that even today many millions of people are denied the bare necessities of life. The prospect of additional billions, ninety per cent of them in the less developed countries of the world, should reinforce determination to supply their needs, but also, in all humanity, to limit the size of the addition.

There is much to learn from the experience of the last two decades, during which world growth rates have slowed from 1.99 per cent in 1960-65 to 1.72 per cent in 1975-80.

First, during that time many governments have turned away from an attitude which declared the growth and

By the year 2000 there will be at least 150 million disabled children under 15 years of age living in developing countries.

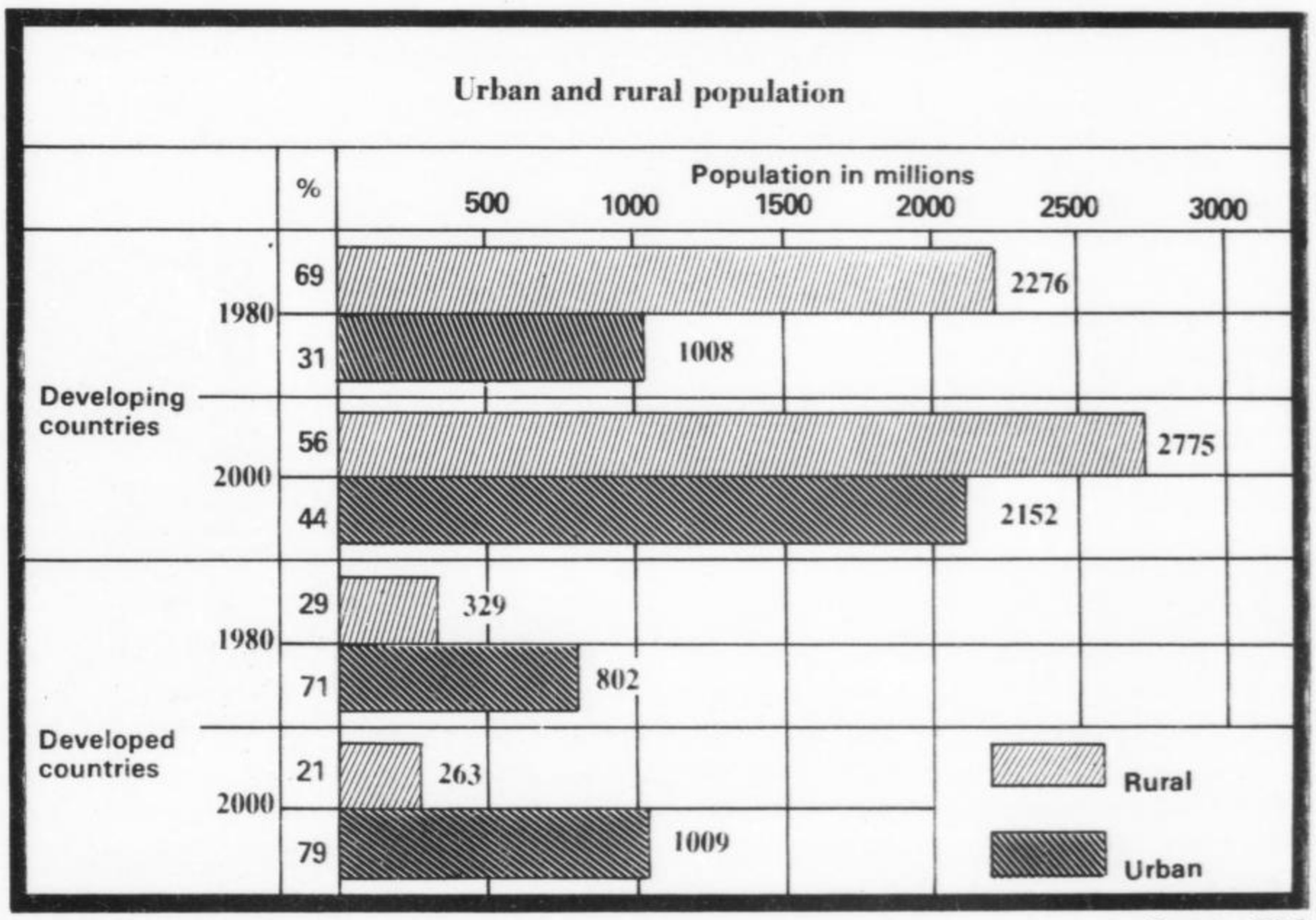
spatial distribution of a country's population to be irrelevant to development planning. About eighty per cent of the population of the developing world now live under governments which consider the national level of fertility to be too high and would like to reduce it; 110 out of 126 governments in developing countries consider the distribution of their populations to be unacceptable to a greater or lesser degree.

Second, the recognition by governments that population growth and movement have definite, sometimes deleterious, effects on a country's economy and social structure and conversely that patterns of development affect rates of growth and movement has given rise to policies designed to counter both causes and effects. In the process of developing and implementing these responses, the nature of the linkages between population, natural resources, the environment and development has become clearer. Experience and research have both shown that population and, for example, health care, education, the status of women and social development generally are in a circular relationship. Reinforcing one may have a positive effect on the others, or perhaps it may be necessary to strengthen several factors before another will respond.

The World Fertility Survey is one of the best examples of carefully structured research work showing the complex interrelationships between one aspect of population and other variables. The Survey demonstrates the truth of several assumptions—that fertility goes down as status in society goes up, for example—and refines some others. Employment for women and low fertility have generally been found to be linked, but the World Fertility Survey showed that women who had worked at some time had fewer children than those who had never worked, and that the type of occupation is important. Agricultural work apparently has little effect on fertility compared with blue-collar employment, while white-collar and professional women have the smallest families.

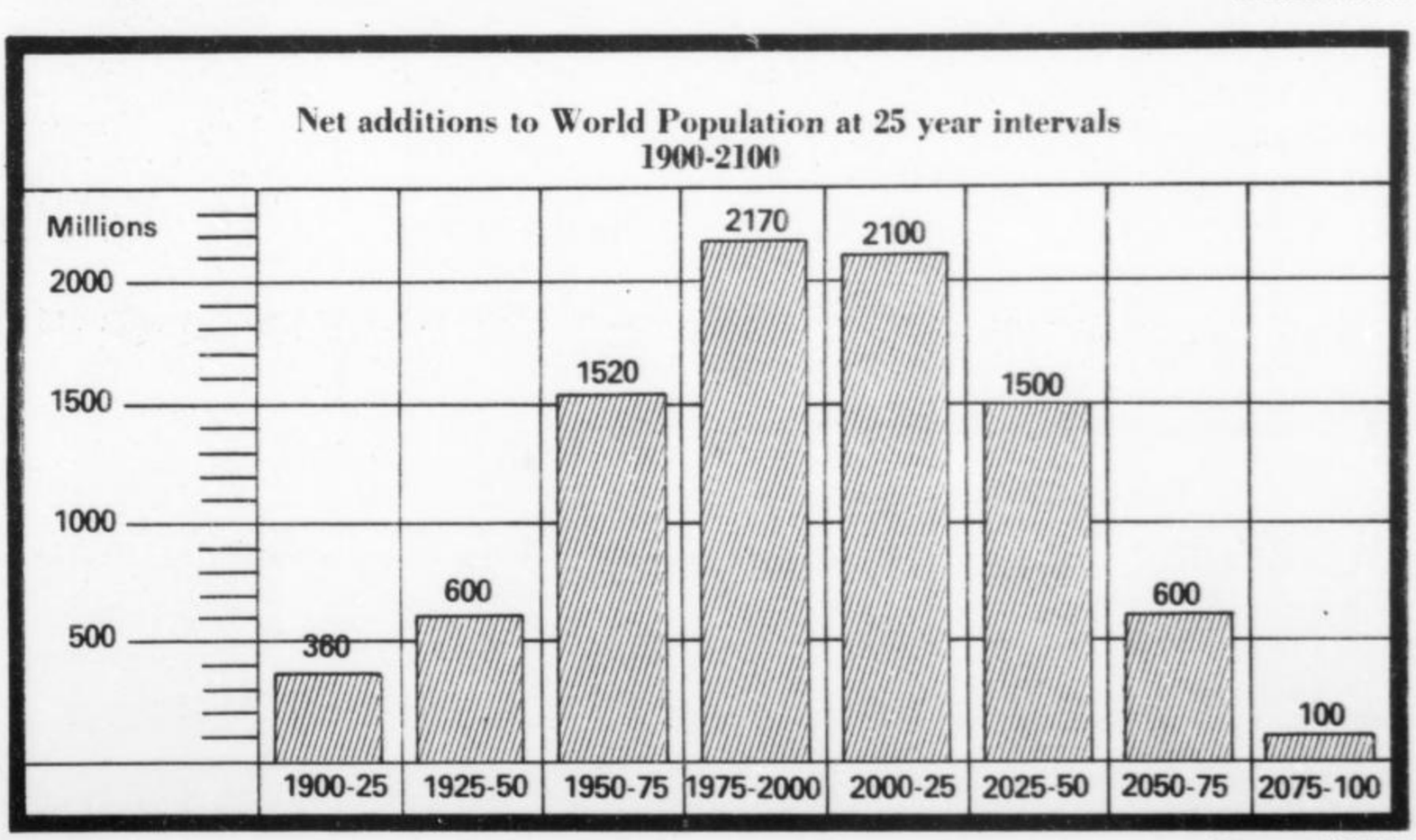
Literacy and level of education affect not only the number of children a woman has but their chances of survival. Children of illiterate women in ▶

**Urban and rural population**




Source : WHO

**Net additions to World Population at 25 year intervals 1900-2100**




Source : UNFPA

▶ Latin America, for example, have a risk factor 3.5 times that of children whose mothers have had ten or more years of education. The probability of death between birth and the age of two declines steadily as the mothers' level of education rises.

Research and experience in the 1970s seem to show that the aim of reducing both birth and death rates in developing countries is best served by paying attention to the education and employment of women, to access to health and family planning services and to changes in attitudes to family formation.

The third important lesson to be learnt from the experience of the 1960s and 1970s is the need for effective delivery of services. Reducing the number of infant deaths requires the

## *Can the world adapt to an aging population?*

eradication or at least control of the important killer diseases, which are mainly contracted through polluted food and water and poor sanitation. Medical services to treat disease may be of less importance than effective communication about the importance of clean food and water, the need for adequate sanitation, and the provision of each. This applies to family planning as to any other service; the level of awareness of contraception, the World Fertility Survey found, is considerably higher than the level of practice. One reason is the lack of services.

The fourth point is the size of the allocation a country is willing to make for population programmes. The proportion of national budgets devoted to population has dramatically increased as interest has grown. In Kenya, for example, government expenditure during the period 1976-80 was about twelve times the amount spent from 1971-75.

Lastly, international assistance for population has doubled in real terms since 1970 and forms perhaps a third of the total resources spent on population programmes in developing countries. It is still, however, less than two per cent of total international assistance.

Between them, these five points cover the main developments in planned approaches to population problems and between them help to account for the accelerating fertility decline which has been seen over the past decade. But global figures conceal wide regional and national diversity. Most of the decline in fertility is accounted for by a handful of countries, mostly in Asia, which contain between them some two-thirds of the population of the developing world. In many other countries, notably in Africa, population growth remains high and life expectancy low. For these countries the strain of attempting to balance already scarce resources against the needs of a rapidly growing population is becoming considerable. In many of them the problems are compounded by the difficulty and cost of providing services to a scattered and diverse population when even the basic medical, educational and transport services are lacking.

For the future, the answer must be, at least in part, more of the same. An increase in resources devoted to population, both internally and internationally, is essential if the momentum created in the 1970s is to be maintained. As programmes develop, they will throw up more information on the linkages between population and development, showing the way to new kinds of approach, but they will also show up areas of ignorance or uncertainty where research is needed before progress can be made. Above all we will need better techniques for reaching out to the community and gaining acceptance and co-operation. One thing which experience has taught us is that

CONTINUED PAGE 39

## *When living standards go up, does fertility go down?*

*Source :* WHO

| Infant mortality (per 1000 live births) | | |
|---|---|---|
| | Developed countries | Developing countries |
| 1975 | 22 | 109 |
| 2000 | 10 | 50 |

## Colour pages

**DISARMAMENT**

***We should try to establish the Universal Declaration of Human Rights and the human rights pacts as the basis of a new world morality. I couple the Universal Declaration of Human Rights with the human rights pacts because the latter cover economic and social rights, which I think must be included among the human rights that should be supported by governments. This is important not only in order to prevent the rights of the individual from being violated but also from the point of view of credibility. How can you expect the children of today and tomorrow to believe in the concepts we try to teach them if in practice they are being violated? If a government organizes the torture of political prisoners, for instance, can you expect youngsters to respect that government, or to think that torturing people themselves is a thing not to be done?***

**Sean MacBride**

**Angola. Photo Mingam © SIPA-Press, Paris.**

**EDUCATION**

***I believe that the main object of education should be to encourage the young to question and to doubt those things which have been taken for granted. What is important is independence of mind.***

**Bertrand Russell (1872-1970)**

**Benin. Photo © Claude Sauvageot, Paris.**

**HUNGER**

***In truth, our system of food security remains based on next year's crop.***

**Edouard Saouma**

**Peru. Photo Silvester © Rapho, Paris.**

**DEVELOPMENT**

***Man is the best remedy for man.***

**Wolof proverb**

**China. Photo Eve Arnold © Magnum, Paris.**

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# The aftermath of the population explosion

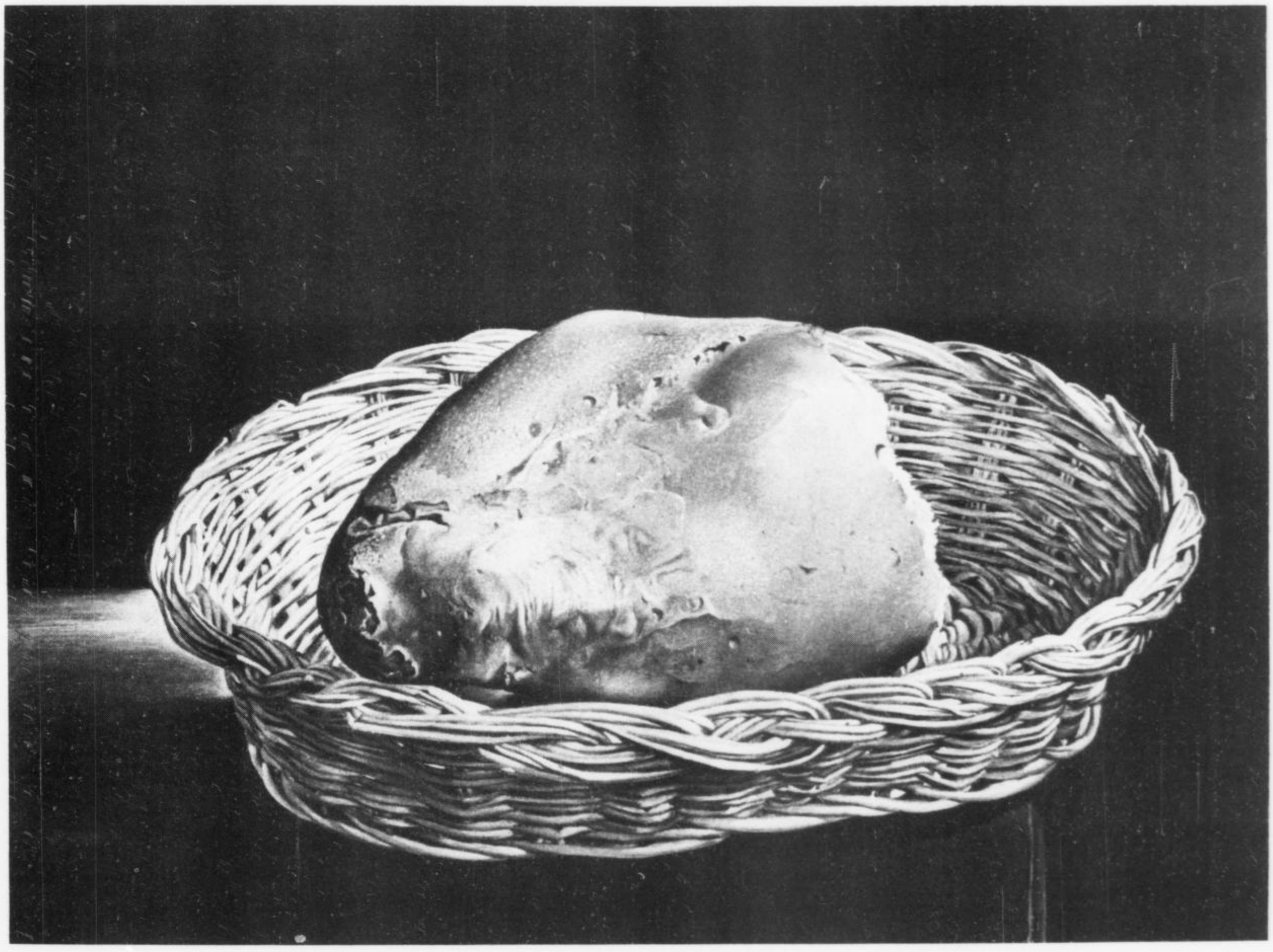
CONTINUED FROM PAGE 34

population programmes cannot be successfully run without the active participation of the people. The community can provide physical resources, leadership and communication to support the government programme.

In addition, new approaches will be called for to meet problems as they develop. What should our response be, for example, to the staggering increases in urban population now in progress and foreseen for the future? Some possible answers were suggested by the Conference on the Urban Future held in Rome in 1980. The question of international as well as internal migration will call for urgent attention as people increasingly seek work far from their homes. Also, as the proportion of elderly people in the population increases far beyond what most developing countries have been accustomed to, social structures adapted to their needs and abilities will be required.

These questions and others like them will occupy the attention of the international conference on population planned for 1984. Ten years after the World Population Conference in Bucharest, it will be possible for the nations of the world to sit together to assess their progress and their problems and agree on a common response. The story of their success will be told by the figures in the memory bank on the East River—and on the faces of millions of men and women throughout the developing world.

■ **Rafael M. Salas**



*Sleep, hungry people, may the gods of food watch over you,*
*And if words do not satisfy your hunger, may dreams assuage it.*
*Sleep on the bed of broken promises and the flow of words,*
*And may the shadowy handmaidens of reverie*
*Delight you with round loaves of bread shining like the moon.*

**Mohammed Al-Jawahiri**
*Lullaby of the Hungry*

***Corbeille de Pain*** **(The Breadbasket, 1945) by Salvador Dali.**
**Photo Éditions Draeger © SPADEM 1982, Paris**

*The nuclear threat, as manifest in the deterrent theory, implies an ever more determined search for a more effective second strike capability, and the normal defence-of-the-territory effort is becoming more and more concerned with the permanent preparation of a country for a preventive war.*

**Marek Thee**

**Soldier. Photo United Nations, Nagata.**

# DISARMAMENT, DEVELOPMENT

**THE report of the independent committee on disarmament and security under the chairmanship of Olof Palme, extracts of which are published on page 44, spells out with terrifying precision the consequences of a possible nuclear war between two superpowers: 200 million dead, 60 million more wounded by explosions, fire and radiation. The report concludes that a generalized atomic war would plunge humanity into chaos and perhaps mean the annihilation of all human life.**

**Can such a war be envisaged today? The constantly escalating race to overarmament seems to be leading in this direction, for it is impossible to see how it can continue indefinitely. It is often justified in terms of the need to establish a "balance of deterrence", but perhaps such a balance is a fiction and, since it is unattainable, logic insists that the absurd, abortive arms race should give way to the only rational alternative solution: de-escalation ending in general and complete disarmament (see the *Unesco Courier,* April 1979, "The Arms Race").**

**But though both the motivations and the goals of overarmament may be irrational, does it not buttress the economies of some countries? Are arms industries necessary to soften the effects of crisis? This point of view is both short-sighted and fallacious. Overarmament means colossal waste, it misuses human resources, it kills by condemning to famine millions of people in the Third World. It exacerbates imbalances and makes crisis more acute. But with political determination and a full awareness of all that is at stake, today's vast technological potential could be turned to good use and the arms industry could be converted to peaceful ends without too many problems (see the *Unesco Courier,* March 1982, "Swords into Plowshares").**

**Such a project is no longer utopian. How could it be carried out? Unesco's role in this field is clearly set forth in its Constitution which formulates the objective of "advancing, through the educational and scientific and cultural relations of the peoples of the world, the objectives of international peace and of the common welfare of mankind". Unesco has pursued this goal unfailingly by striving to create a favourable climate for disarmament in world opinion and above all among young people (see the *Unesco Courier,* September 1980, "Disarmament Education").**

# Development through Demilitarization

***by Richard Falk***

WORLD economic, political, and cultural life in general is entering a period of sustained crisis. Dominating the current scene is a ferocious arms race between the superpowers and an incredibly rapid process of military modernization that is global in scope, taking in countries of the most varied backgrounds. An increasing militarization of political life, as well as a growing popular revulsion against the danger of nuclear war are among the immediate results. This preoccupation with the military picture, including concern with the recurrence of actual warfare throughout the Third World, makes it difficult in the 1980s to place much creative emphasis at the international level on the development process.

This difficulty is reinforced by the general circumstance of economic recession that has existed for the past several years and is likely to persist at least until the mid-1980s. The impact of recession has been felt in the West and its repercussions have been felt in the East, North and South, in the form of reduced economic growth, and for almost every country some form of monetary disturbance, generally some combination of indebtedness and inflation. The most painful burdens of this prolonged recession are felt by the poor, the weakest economies in the South, and the underclasses in the North. Even the richest market economies of the North, with the exception of Japan, have been enduring high levels of unemployment, totalling as of 1982, an incredible aggregate figure of almost 30,000,000.

How long the international and intranational poor will acquiesce in bearing the brunt of cyclical adjustment costs is highly uncertain.

What is not in doubt, however, is the impact of this economic ▶

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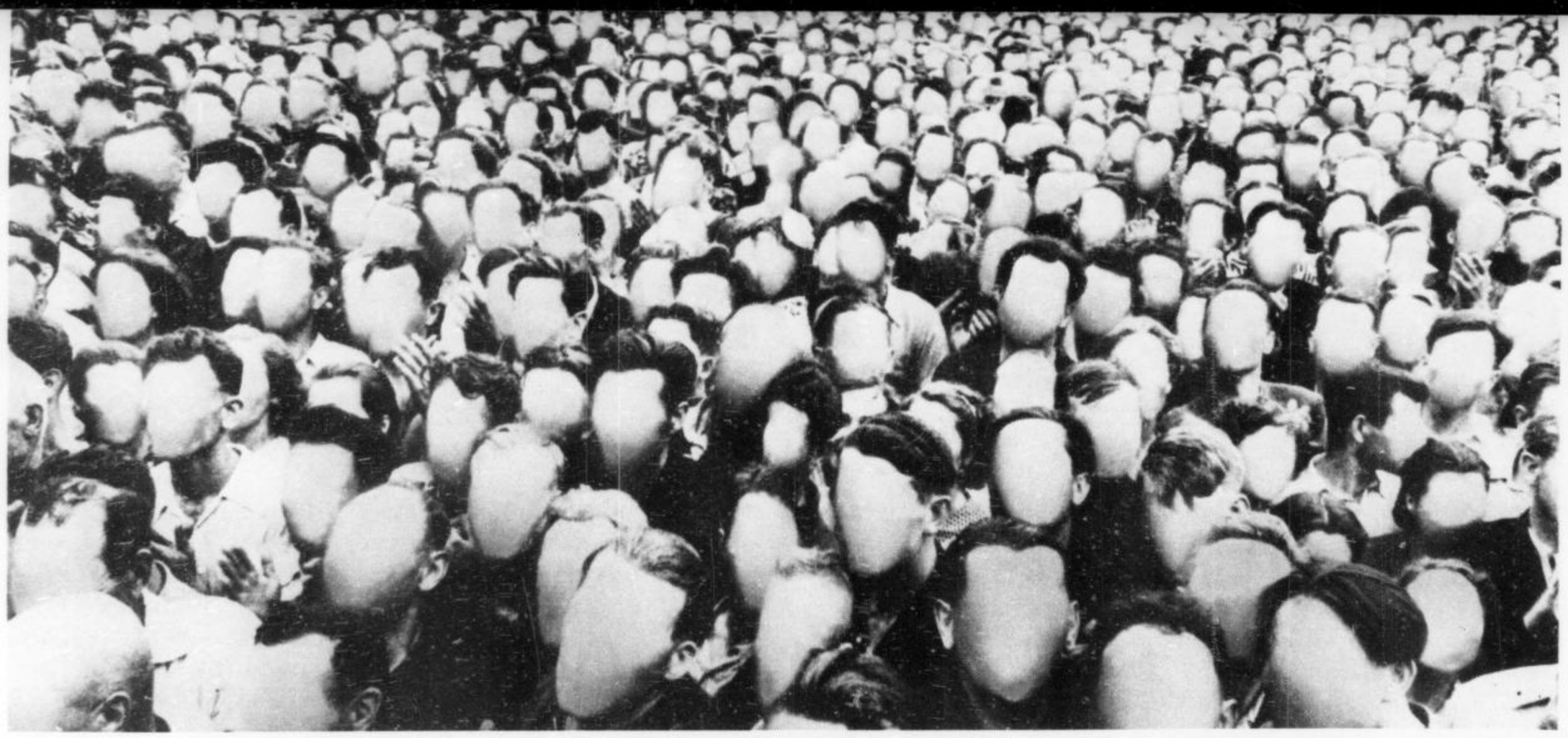
**RICHARD A. FALK,** *U.S. educator, has been Albert G. Milbank Professor of International Law and Practice at the University of Princeton since 1965. Among his many published works are* This Endangered Planet *(1971),* A Study of Future Worlds *(1975) and (as co-author)* International Law and World Order *(1980).*



*Peace is not merely the absence of war, it is a virtue which is rooted in the strength of the soul, for obedience is the constant desire to do what must be done according to the common law of the City. A City, it must be repeated, in which peace reigns solely through the inertia of its citizens, led like a flock of sheep and accustomed only to servitude, should be called a wilderness rather than a City.*

**Spinoza**
**(1632-1677)**

**Photomontage Tsunehisa Kimura © Pacific Press Service, Tokyo. ANA, Paris**

crunch on the development picture. The earlier liberal impulse to negotiate co-ordinated global economic reforms that shift resources and trade advantages from North to South has definitely been blunted, mainly by domestic pressures toward selfishness that flow from the overall recession, and partly from the related disillusionment that is affecting foreign economic assistance and the role of such international financial institutions as the World Bank and the International Monetary Fund.

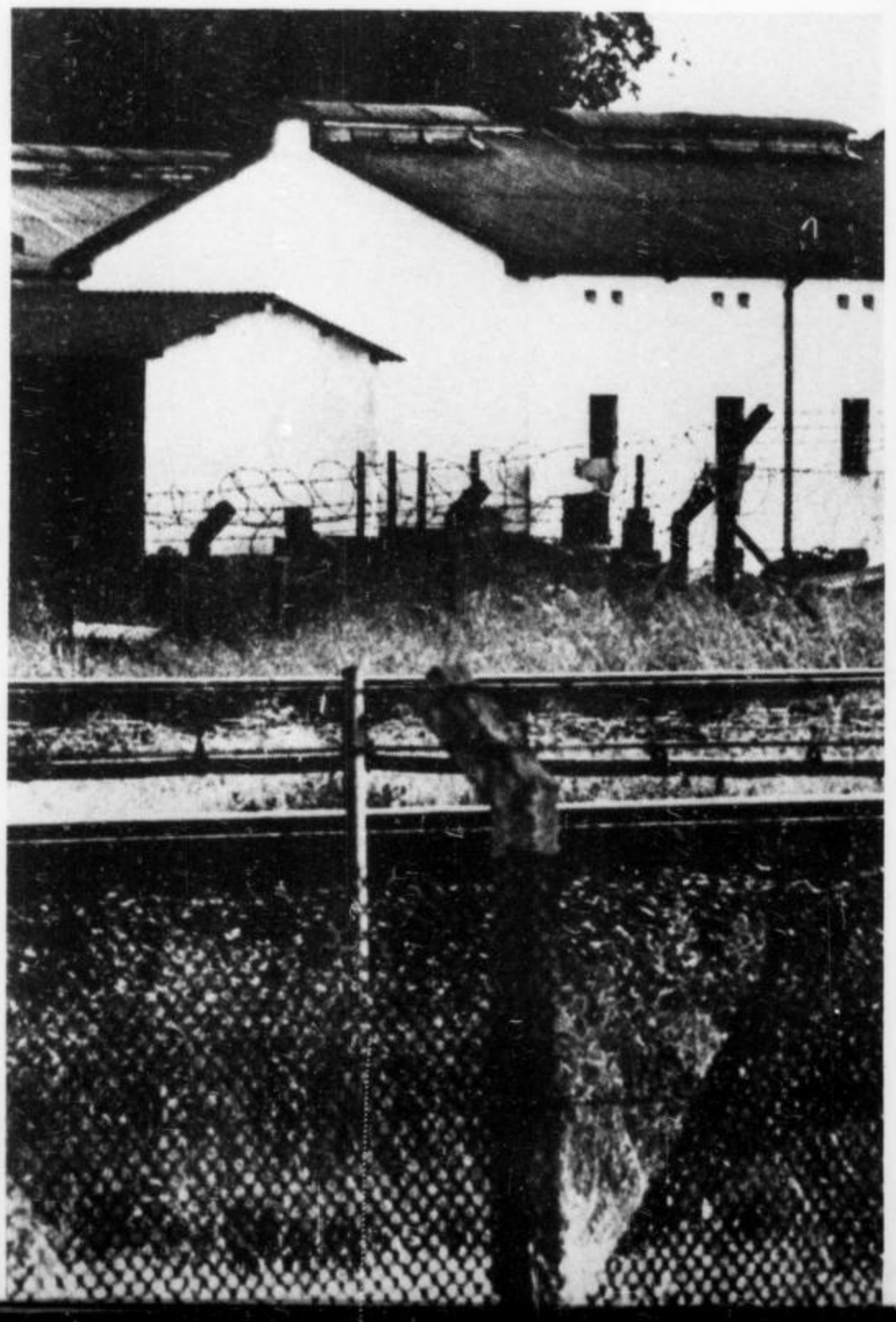
It is important to realize fully that this disillusionment generally affects both donor countries of the North and recipient countries of the South. Many donor countries, especially those under conservative leadership, are becoming unconvinced that it is worth "investing" their resources in the elimination of poverty or the promotion of international co-operation, alleging that corruption among élites, unrestrained population growth, and political turbulence and radicalism in recipient countries nullifies any expected benefits of capital transfer. The recipient governments, in contrast, seem increasingly disturbed by the extent and character of interference in their economic and political life that is demanded by international financial institutions as part of the cost of receiving either public or private capital assistance, and would generally prefer trade concessions, including tariff relief, to further dependency-creating infusions of capital.

In many cases, the debt trap facing Third World governments is producing new forms of post-colonial dependency that interfere with the full exercise of sovereign rights by precluding autonomous modes of development at the national level. In addition, externally conceived conditions of fiscal soundness are given priority over the social and political goals of development, including the elemental well-being of the people. One major effect of this externally imposed "austerity" is that wages and labour unions are kept artificially repressed by the apparatus of State power, which often requires interference with human rights and reliance on organized terror to maintain order.

Furthermore, the modernizing side of the development process has imposed on most Third World governments a heavy import burden. To pay for these import costs, without producing even worse situations of indebtedness and inflation, has led many Third World governments to emphasize export-led growth.

This emphasis has been encouraged by the main centres of international influence, including banks and multinational corporations. But export-led growth has meant giving preferential treatment to investment and development projects in areas of production where export demand is strongest. In agriculture such priorities have meant a push to replace traditional agriculture with cash crops that bring a favourable price on the world market. Often the local population suffers either by a reduction of domestic food supplies or by the consolidation of land holdings in large-scale agrobusiness ventures.

In industry, the adverse effects of export-led growth include an



additional incentive to keep wages repressed so as to enable lower prices and higher profits for output and a receptivity to polluting technologies as a means of attracting forms of foreign investment that migrate overseas to escape burdensome regulation at home. The net effects are to distort the development process in relation to the satisfaction of basic human needs (that is, the elimination of poverty) the attainment of rising living standards for the overall population, and to make the domestic economy extremely vulnerable to shifts in the pattern of international demand.

A further complicating factor in assessing the current development picture has been the unevenness of economic growth in the Third World. The most obvious division has been between the oil-surplus and oil-deficit countries, creating vastly different economic circumstances from country to country. It should be noticed, of course, that the apparently obvious advantage of being endowed with abundant oil resources for export can work out as a mixed blessing. The enormous capital placed at the disposal of the government and the investing élite can induce mindless and unstable modernization, including a top-heavy military establishment that is visibly dependent on foreign advisers and a pattern of development that concentrates its material rewards on small sectors of the population.

Rapid growth may also induce disruptive patterns of rural-urban migration that strain the facilities of the main cities while undermining the self-sufficiency of the countryside. Inflation, pollution, housing shortages, urban congestion, and the breakdown of

*In a nuclear world, will the poet's lamp of clay suffice for his needs? Yes, if man yet has remembrance of clay. It is enough for the poet to be the conscience of his time.*

**Saint-John Perse (1887-1975)**

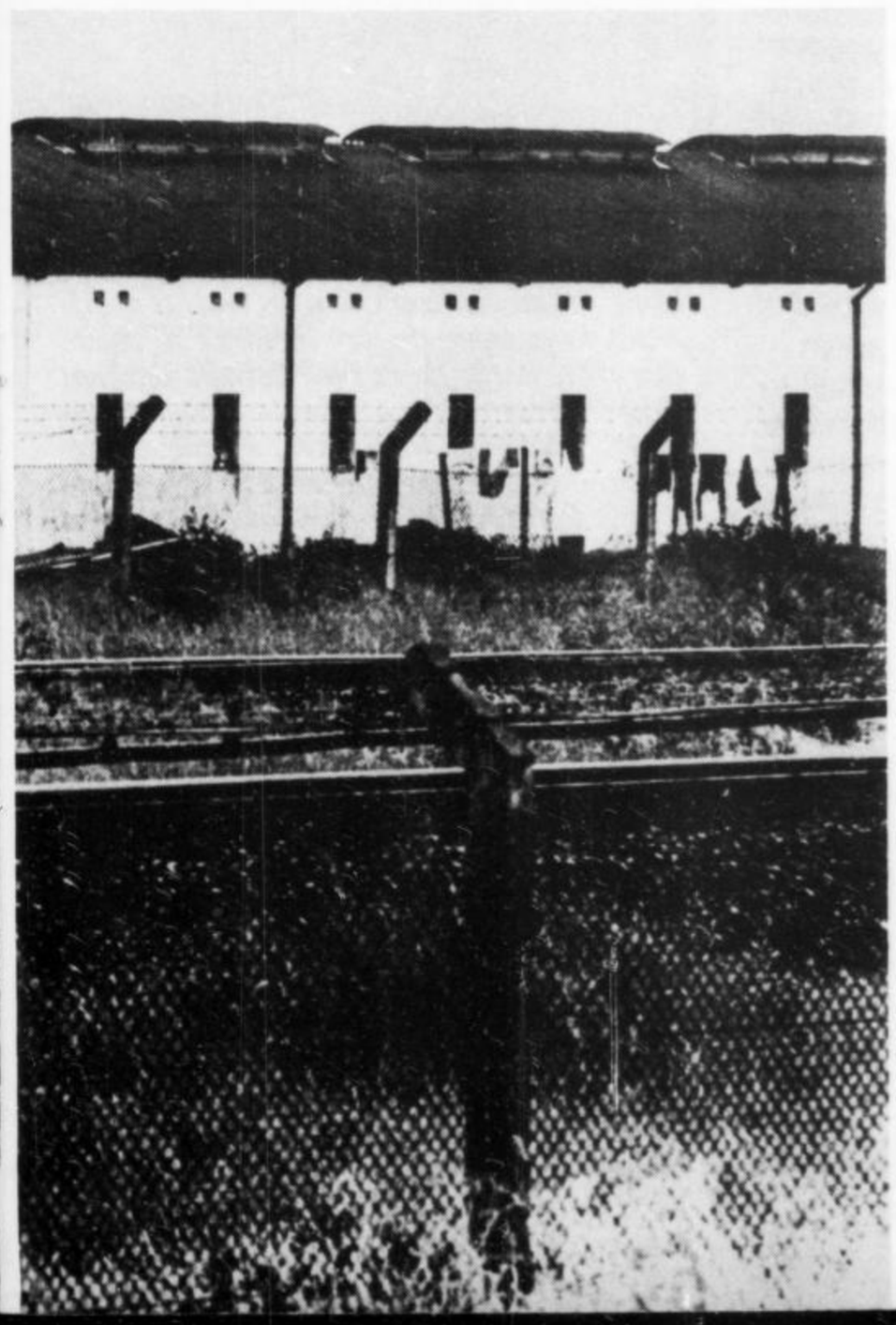
**"The Poet Li Po Reciting a Poem", by Leang Kai (c.1140-c.1210). Executed in less than 15 brushstrokes, the work is typical of Zen Buddhist art. Photo © Roger Viollet, Paris. National Museum of Japan, Tokyo.**

## *Where are the real development decisions taken?*

public transportation can make the life of ordinary people harder while the country as a whole is experiencing high growth and unprecedented prosperity. Perhaps even worse, certain types of rapid modernization cause cultural traumas of a severe sort, displacing and threatening traditional values.

There are other basic forms of unevenness that produce greater diversity of outlook on development issues. A few Third World countries have managed to sustain economic growth over a sufficient period to be in a class by themselves, the so-called "new industrial countries". These "new Japans" are sufficiently modern to make it no longer accurate, indeed, if it ever was, to think of the Third World as a grouping of non-Western states that are generally all at low levels of industrialization. Also, of course, there are important distinctions between the developmental outlook of countries integrated into the world capitalist economy and those largely socialist societies that are neither havens for investment and credit, nor participants in any major way in international trade. At the same time, the uneven experience and capability of First World economies in coping with the recession reflects a sharpening of competition even among close allies, giving vent to protectionist tendencies that threaten economic warfare that could be very damaging to most countries in the Third World.

In short, there is no longer a consensus on development in either North or South. Furthermore, the intensity of geopolitical rivalries and the anguish of slow economic growth for most societies, has moved the North-South dialogue to the margins of international concern. The OPEC countries could still mount pressures, if so inclined, but their interests seem generally so closely linked to the main oil-importers and to anxieties about radical domestic challenges, that their support for international economic reforms is increasingly low-profile. ▶



*Whether there is an enforcement authority or not, whether law is statutory or not, peace will still only be secured if the International Law is based on certain fundamental principles. Law which offends against basic human rights does not fulfil the purpose of law because it does not secure man's life in society.*

**Julius K. Nyerere**

**South African mine compounds enclosed by barbed wire fences. Photo Abisag Tüllmann © International Defence and Aid Fund for Southern Africa, London.**

Such a global setting is obviously characterized by a growing pluralism. Each government calculates its gains and benefits and emphasizes sovereign rights. There is less confidence that international reforms are either feasible or important. The general neglect of the Brandt Commission's generally enlightened recommendations, the inconclusive and disappointing provisional outcome of the law of the sea negotiations, the desultory spirit of the Cancun Conference, and the heightening of East-West tensions among the superpowers are all signs pointing in the same direction. The North feels no pressures because the South fails to exert leverage, and is, in any event, more ambivalent about what it has to gain.

All in all, the development picture has few bright spots. Growth with equity requires an efficient national mobilization of capital and a fairly large degree of autonomy in relation to the world economy. International institutions can play supportive roles, offering selective help by extending credits or loans. Yet, in essence, the self-help character of the world political order, with its dynamic of militarization, and the hierarchical character of the world economic order, with its long phase of stagnancy, creates very little basis for optimism. Instead, slow growth without equity is the near-term prospect for the majority of peoples and countries of Asia, Africa, and Latin America.

There are two positive paths open to restore hope in the development process. First, popular movements might achieve real control over their development choices, provided they can prevail over the coalition of foreign and domestic élites that maintain structures of privilege and exploitation. To prevail usually means a struggle for democracy and human rights that amounts to a national revolution. Secondly, significant political successes for the grassroots, citizens anti-nuclear movement now surging in the advanced industrial countries and beginning to challenge established leadership and economic priorities, and the demilitarization of

***Do cash crops grown for export prevent poor countries from feeding their poor?***

# The consequences of nuclear war

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*WHEN a nuclear weapon explodes in the atmosphere, the first noticeable effect is a blinding flash of intense white light strong enough to blind observers many kilometres away. The light does not kill, but the heat that comes with it does. Both light and heat are emitted by the fireball caused by the explosion, a mass of air containing the residues of the weapon, heated to the order of 10 million degrees centigrade. Any unprotected person within two kilometres of the fireball will be killed by the heat alone. With a weapon of low yield, say 10 to 20 kilotons, roughly the size of the bombs dropped on the Japanese cities, second-degree burns will be suffered as far as three kilometres from the explosion.*

*Within seconds, the light and heat are followed by a blast wave. It arrives like a thunderclap, pursued by hurricane-force winds strong enough to uproot telephone poles and trees, overturn trucks, and sweep human beings along at a tremendous speed. The compression of air pressure brought on by the wind and the blast wave itself will crush buildings, killing nearly everyone inside, and loosen bricks and paving stones which will hurtle in all directions, knocking over everything in their path. Anyone in the open or in ordinary buildings within 1.5 kilometres of the blast will have virtually no chance of surviving.*

*As the fireball rises, it cools and becomes a cloud, hovering high off the ground. Beneath it, a column of dust and smoke is sucked up from below. Looking like an enormous mushroom, six kilometres high and four across, the cloud is a mass of radioactive atoms, some of which are lethal enough to kill anyone who had managed to survive the heat and blast effects.*

*If the explosion occurs close to the ground, the immediate effects will be greater, as thousands of tons of radioactive soil are sucked into the air in deadly concentrations and deposited over a wide area. Although its deadliness dissipates rapidly, harmful radio-active materials from the blast can be carried thousands of miles and not reach the ground for weeks. Over the decades to follow, the risk of cancer and, possibly, genetic defects will be great. Neither the unborn nor the unconceived can escape the effects of nuclear war.*

*These are only the direct effects of a nuclear explosion; secondary destruction will be ubiquitous and intense. Fires will be the worst hazard, caused both by the heat of the explosion and by falling debris, broken gas mains, ruptured fuel tanks, and the like. Under certain circumstances, the fires triggered by the blast will coalesce, forming a storm of heat and flame that will ravage huge areas and be virtually impossible to extinguish until there are no more materials to feed on.*

*Other secondary effects will also be devastating. The destruction of water mains and sewers will result in the spread of infectious diseases in epidemic proportions. Communications and other electronic systems will be disrupted severely by the electromagnetic pulse emitted by the blast. The damage from blown transformers and overloaded computing and switching circuits will be extensive and difficult to repair. As a result, the allocation of emergency equipment, even the identification of the location of injuries and damage, will be difficult. And finally, the deaths of doctors and other medical personnel, and the destruction of health care facilities and other municipal services, will mean that even minor injuries and common diseases will result in many more deaths than normally would be expected.*

*The exact consequences of an exchange of nuclear weapons would depend on many factors. Among the most important would be the weather; winter would be a particularly cruel time for those few who managed to survive. But the overriding influence would be the number of bombs used and the extent of the attacks. A nation's ability to contain the effects of a single explosion would depend greatly on whether or not the central government could shift people, water, food, and medical supplies from other regions. If the war were widespread, its effects could well be synergistic; that is, the cumulative results of burns, blast injuries, radiation disease, and secondary consequences such as the spread of infectious diseases could be far greater than the sum of their individual effects.*

*At some point, a nuclear exchange could bring urban civilization to an end. It is difficult to imagine the continuance of social discipline in the face of the devastation that would accompany a war involving hundreds, much less thousands, of nuclear explosions. Would people be willing to abide by the authority of a government that had just led its country to incredible disaster? If not, the basic services upon which modern society depends—such as protection from criminal elements, the banking and monetary system, the generation and distribution of electric power, the distribution of water and food to urban areas—could well come to a halt. Society could regress to autonomous bands of people living largely in the rural areas that had been spared the worst radiation, each surviving primitively on its own wits and resources.*

*Jonathan Schell has put it well, in his recent book* The Fate of the Earth:

internal and international political life could free resources and talent for a renewed emphasis on development and the elimination of mass poverty.

The reversal of the nuclear arms race is unlikely to occur without a wider assault upon war and militarism, which in turn, will encourage emphasis on the causes of war, including economic distress and disparities within and among states, as well as on institutional substitutes for war (peacekeeping, dispute-settlement under the auspices of the United Nations, regional organizations).

Demilitarization implies new conceptions of security, especially a substitution of security for the people in place of security for the State. Such an altered context for security would create a new progressive emphasis on world development policy and processes, as well as a devaluing of armaments. Security will then be understood more in terms of a governing process supported by the citizenry than by the size and quality of the military establishment.

The fate of development, then, is tied closely to prospects for demilitarization. In the interim, a particular country will do well to free itself, to the extent possible, from crippling structures of dependency. A national governing process is not truly independent if it is subject to policies set by distant centres of decision, whether these be foreign capitals, multinational corporate headquarters, or the guidelines of international financial institutions. Demilitarization, self-determination, human rights, and development are increasingly part of a seamless web of progressive national aspiration.

■ **Richard Falk**

***I Deganawidah***
***And the chiefs of the Five Nations***
***of the Great Peace***
***We shall uproot the tallest pine***
***Into the cavity thereby made***
***We shall cast all weapons of war***
***Into the depths of the earth***
***Into the deep underneath...***
***We shall cast all weapons of war***
***We shall bury them from sight forever...***
***Then we shall plant again the tree...***
***Thus shall the Great Peace be established***

***The Tree of the Great Peace***
**Iroquois poem**

**Canadian Iroquois Indian of the "Sang" tribe. Photo © Boyer-Viollet, Paris.**

[Although nuclear strategists] speak of a period of "recovery" after a limited attack, the likelier prospect is a long-term radical deterioration in the conditions of life... To restore [these] essentials of life takes time; but there would be no time. Hunger, illness, and possibly cold would press in on the dazed, bewildered, disorganized, injured remnant of the population on the very day of the attack. They would have to start foraging immediately for their next meal. Sitting among the debris of the Space Age, they would find that the pieces of a shattered modern economy around them... were mismatched to their elemental needs.

*Looking into the future, considering the potential long-term effects of many nuclear explosions on the human gene pool and the incidence of cancer, to say nothing of its likely effects on the ozone layer and resultant destruction of animal and plant life and eventual climatic changes, human life itself could be in jeopardy. Thus, humanity would face the ultimate risk—its own extinction. Within five years of the nuclear explosion in Hiroshima two hundred thousand people had died from the effects of the bomb. Within a similar period of time, fatalities attributable to the nuclear blast in Nagasaki, where the hilly topography of the city tended to limit its effects, rose to 140,000. Even today, the death toll is still rising in both cities, albeit slowly, as such long-term effects as an increasing cancer rate continue to manifest themselves.*

*Every year, the descendants of those who died at Hiroshima light lanterns, each one inscribed with the names of a dead family. They push the lights off into the river that runs through the city. For miles, the whole river appears to be one mass of flame.*

*And what of the survivors? In December 1981, the Commission visited Hiroshima and spoke with survivors of the atomic bomb. Consider the testimony of Mr Yoshiaki Fukahori, a survivor of the Nagasaki bomb:*

Some people say that the survivors are more fortunate than those who died, but is that really so? Those of us who have survived these thirty-six years having to fight to find food, to find clothes, to find a livelihood... I rather think that we are suffering from a heavier cross... Because I was young when I was exposed to radiation, I have a tremendous uncertainty about the future of my health. My wife is also a victim and is suffering from disease... As parents we are uncertain about the future of our children, the second generation victims... Would my children be able to father and mother healthy children? Would the third generation of my family survive?

*Projecting the consequences of a nuclear explosion for a modern urban area on the basis of the bombs exploded over Japanese cities in 1945 is tricky. Nuclear weapons have changed tremendously. The bombs used against Japan are relatively small by current standards, and the distribution of the energy released by the explosions among light, heat, blast, and radioactive emissions is likely to be different in modern bombs. The characteristics of cities also have changed. The Japanese cities of the 1940s, constructed largely of wood, probably suffered much more from fire than would modern cities. On the other hand, the Japanese cities had relatively small populations by contemporary standards, and thus suffered fewer casualties than might occur today.*

*Still, fairly reliable estimates can and have been made. The US Office of Technology Assessment, for one, has analysed several hypothetical examples of single nuclear bombs dropped on modern cities. Consider, for example, the effects of a one-megaton weapon, the equivalent of one million tons of conventional explosives, roughly the size of the warhead of a US Minuteman II or Soviet SS-11 ICBM, on the cities of Detroit and Leningrad, each with populations of about four million.*

*If the weapon exploded in the air over Detroit at night, without warning, approximately 470,000 people would be killed, and another 630,000 injured. If the same weapon were exploded during the daytime, when the downtown part of the city was crowded with commuters, an additional 130,000 would die. A one-megaton weapon exploded over Leningrad would be even more devastating, as the population of that* ▶

*I have a dream that one day men will rise up and come to see that they are made to live together as brothers. I still have a dream this morning that one day every Negro in this country, every coloured person in the world, will be judged on the basis of the content of his character rather than the colour of his skin, and every man will respect the dignity and worth of human personality... I still have a dream today that one day justice will roll down like water, and righteousness like a mighty stream. I still have a dream today that in all of our state houses and city halls men will be elected to go there who will do justly and love mercy and walk humbly with their God. I still have a dream today that one day war will come to an end, that men will beat their swords into ploughshares and their spears into pruning hooks, that nations will no longer rise up against nations, neither will they study war any more.*

**Martin Luther King**
**(1929-1968)**

**Civil rights march in the United States. Martin Luther King fifth from right. Photo Matt Herron © Rapho, Paris.**

▶ *city is less suburban and more closely packed. Under the same night-time conditions specified for the Detroit estimate, 890,000 residents of Leningrad would be killed, and another 1,260,000 injured. More than one half the city's total population would be the victims of a single nuclear explosion.*

*Large warheads like the one just described, however, are going out of fashion. The nuclear powers have been replacing their existing weapons with yields in the megaton range with greater numbers of weapons with smaller explosive yields. These smaller weapons are more efficient. Several kiloton-range weapons can do greater damage, even though their total yield may be less than a single-megaton weapon. For example, the detonation of ten 40-kiloton weapons over Leningrad, in aggregate only 40 per cent the yield of a single one-megaton weapon, would likely result in 130,000 additional fatalities.*

*The physical devastation in either city would be incredible. Houses would be demolished or made uninhabitable in an area of more than 300 square kilometres. If the bomb were exploded on the surface, an area extending well beyond either city's municipal boundaries (more than 1,000 square kilometres) would be contaminated by radiation. Rescue workers and medical personnel could enter this zone to help the injured only at the peril of their own lives.*

*Radiation dangers aside, rescue work would be extraordinarily difficult. Fires would rage, water mains would flood, power lines would be down, bridges, freeways, and elevated railroads would have collapsed. Once proud cities would be reduced to debris.*

*The effects of a nuclear explosion on the medical treatment system would be particularly devastating. The Commission met separately with Drs. Howard Hiatt and Eugene Chazov, US and Soviet leaders, respectively, of an international movement of physicians concerned about the danger of nuclear war. Their testimony makes clear that it would be impossible to provide modern medical assistance, even basic care, to the victims of a nuclear attack.*

*John Hersey recorded the effects of the 1945 explosion on the Hiroshima health care system:*

Of 150 doctors in the city, 65 were already dead and most of the rest were wounded; of 1,780 nurses, 1,654 were dead or too badly hurt to work. In the biggest hospital, that of the Red Cross, only 6 doctors out of 30 were able to function, and only 10 nurses out of more than 200.

## *How would nuclear war affect the earth's climate?*

*Yet numbers and statistical estimates cannot begin to convey the horror of nuclear war, nor the grisly consequences of the destruction of the medical system. Consider the testimony before the Commission of Dr. Tatsuichiro Akizuki, a physician associated with the St. Franciscan Hospital in Nagasaki:*

Our hospital was at a point 1.5 kilometres from hypocentre, therefore the patients and we suffered from only minor injuries. But the building was burned down several hours later. From the burning city, grotesque looking naked people came in droves and they moaned in agony and pain. It took time for me to realize that they were human beings suffering from severe burns and bruises... All the major hospitals were burned down or collapsed, and most of the victims died without receiving any treatment. Several hundred people came to me. They were turning black and purple, vomiting blood and passing black stools before they died. These were the symptoms of acute radiation illness... There was a big hospital thirty kilometres away, but there was no means to go there. Tens of thousands of people died without receiving any treatment... Patients lay in holes dug in the ground, and people died one after another because of radiation illness... I felt helpless as a doctor. I could not give any treatment to the survivors... What would happen if a nuclear war should occur now? Even if you have doctors, even if you have medicines, human beings are helpless. No matter how much medicine has improved, medicine is helpless in the face of atomic war. It was a hell, an inferno.

*It is clear that the number of people who might ultimately survive a nuclear attack, to say nothing of the physical recovery of the devastated area, would be crucially dependent upon help from the outside. But what if the attack were not an isolated one against a single city? What if tens, or hundreds of major metropolitan areas were devastated by nuclear weapons? If this happened the chances for rebuilding anything resembling our present society would be slim.*

*The chaos that would accompany such an attack is almost inconceivable. Even if only a handful of cities were struck initially, it would cause an overwhelming panic. Every urban dweller would assume that his city would be the next target, turmoil would come as people fled to the coun-*

## Could mankind survive a nuclear war?

*tryside. In some regions, like the American West, many refugees could be accommodated. In areas like the American Northeast, however, or most parts of the Soviet Union, during winter, the evacuations of cities would have terrible consequences. Winds would spread the fall-out over crop lands and river basins. What would be safe to eat, or to drink? In some regions the urban evacuees would be met by a hostile rural population. Even the central political authorities, to the extent that they survived, would be uncertain about the status or well-being of other parts of the country.*

*The reports from Hiroshima and Nagasaki reveal that the instinctive reaction of many of the victims was to protect themselves by leaving the bombed areas as quickly as possible. Children abandoned parents, husbands left wives. Only one bond remained intact—mothers would not be parted from their children. Undoubtedly, amid this disturbance and upheaval, some would find unknown sources of strength and character. But would this be enough to resist the general chaos, to counter the terror of those whose lives and minds had been torn asunder, first by the explosions themselves, and later by the after-effects of illness, disfigurement, insecurity, and the destruction of family, home, and everything familiar?*

*There is no satisfactory way to answer this question. But official US estimates of American fatalities in the event of a large-scale nuclear attack, assuming no effective measures of civil defence, range from 105 to 165 million. Comparable estimates of Soviet fatalities range between 50 and 100 million. In both cases, it can be assumed that virtually the entire economic infrastructure would have been destroyed. Under such conditions, those who optimistically predict a return to ordinary life within one generation are naïve. More realistic is the conclusion by the US Office of Technology Assessment that a nuclear attack involving thousands of warheads, "would place in question whether the United States (or the Soviet Union) would ever recover its position as an organized, workable, and powerful country".*

*A meeting of distinguished doctors from East and West was more pessimistic. They concluded that an all-out nuclear exchange between the United States and the Soviet Union would immediately kill some 200 million men, women, and children. Sixty million more would be injured, of whom 30 million would suffer from radiation sickness, 20 million would experience trauma and burns, and another 10 million would be affected by all three afflictions.*

*At the same time, 80 per cent of the doctors would have been killed and a similar percentage of hospital beds destroyed. Stores of blood plasma, morphine, antibiotics, and intravenous fluids also would have been destroyed. The report concluded:*

The fabric of society would disintegrate and the medical care system, deprived of the facilities developed over the years, would revert to the level of earlier centuries. The surviving walking wounded, physicians and laymen alike, could only provide what mutual comfort the remnants of their individual humanity would permit. The earth will be seared, the skies heavy with lethal concentrations of radioactive particles, and no response to medical needs could be expected from medicine.

*Not only would the US and USSR suffer. For example, climatic changes would be likely. The vast amount of polluting dust drawn into the atmosphere would cool the air by as much as one degree centigrade. A large proportion of the world's wheat stocks are kept at high latitudes. If these stocks were destroyed and the American, Canadian and Russian farmlands contaminated, many countries would suffer famine on a wide scale.*

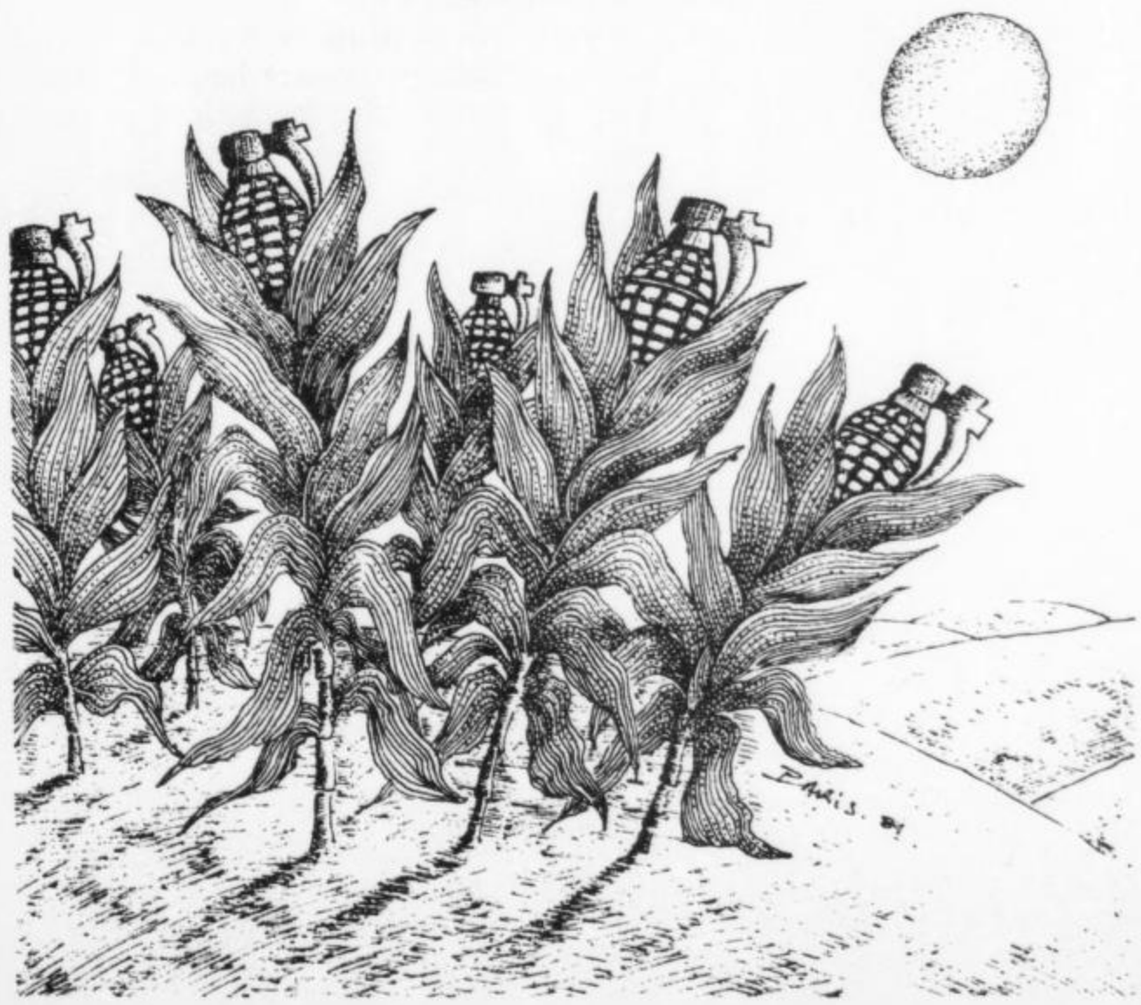
*More than this, the supply of agricultural machinery, pesticides, and fertilizers that now are exported by the industrialized countries would cease. The fruits of agricultural research would no longer be available. For many Third World countries, crop yields would fall dramatically, turning even those countries that are presently self-sufficient into nations with a potential for famine.*

*The world in the 1980s is far more complex than it was even a generation ago. Trade has grown rapidly, interdependence is intimate and ubiquitous. Without the ability to sell oil and other raw materials, textiles and machinery, without being able to import trucks, tractors, tools, fuel, and pharmaceuticals, industry and agriculture in the developing nations would grind to a halt. In many areas, the developing world is like Europe a generation ago, with large urban populations and complex industrial needs. Without trade it would sink. Without the fabric of international financial exchange, all nations, both rich and poor, developed and developing, would shrink to subsistence.*

*In a world undergoing such fast, tumultuous and all-embracing destruction it would be difficult for any society to avoid its consequences. One cannot guess at the degree of social and political disruption, and the breakdown of communications would only add to rumour, feeding the seeds of fear, breeding despair and changing human life in a way and at a speed that is almost unimaginable.*

*No past war can help us understand the impact of a nuclear war. In the Second World War, despite the astronomical death-toll and appalling barbarism, there was no massive breakdown of society or morale. Air raids on cities and industries rarely caused damage and disruption that could not be bypassed in a few days. Individuals suffered, of course, but for many "life laughed and moved on unsubdued". An all-out nuclear war would create a degree of chaos and confusion for which humanity is totally unprepared, and for which it can never prepare. It could mean the end of life itself.* ■

*This article has been extracted from "The Consequences of War", chapter 3 of The Report of the Independent Commission on Disarmament and Security Issues under the Chairmanship of Olof Palme. The members of the Commission were: Chairman: Olof Palme (Sweden); Giorgi Arbatov (USSR); Egon Bahr (Federal Republic of Germany); Gro Harlem Brundtland (Norway); Josef Cyrankiewicz (Poland); Jean-Marie Daillet (France); Robert A.D. Ford (Canada); Alfonso Garcia-Robles (Mexico); Haruki Mori (Japan); C. B. Muthamma (India); Olusegun Obasanjo (Nigeria); David Owen (United Kingdom); Shridath Ramphal (Guyana); Salim Salim (Tanzania); Soedjatmoko (Indonesia); Joop den Uyl (Netherlands); Cyrus Vance (USA). The Report has been published, in English, under the title* Common Security: A Programme for Disarmament. Text copyright © ICDSI, publishers Pan Books, Ltd., London.



***O lord! War is evil and barbaric. War,***
***Abhorred by mothers, fills men's hearts with fury.***
***While war holds sway, who will sow the seed?***
***Who will harvest the ears of corn that June has ripened to gold?***

**Antonio Machado**
**(1875-1939)**

**Bitter harvest. Drawing © André Paris, Fontenouille, France.**

*Man is other men.* Bantu proverb.

# HUMAN RIGHTS

**MEN have always invoked the ideals of justice, equality, and liberty when fighting against oppression and discrimination, and prophets and spiritual leaders of religions and philosophies have preached the universal brotherhood of man. Gradually, progressive societies incorporated into their constitutions, their legal systems and their political and social institutions guarantees which went at least some way to upholding certain rights. However, in the 20th century this edifice of rights was threatened with destruction by the Fascist powers. After the Second World War, in the aftermath of a tragedy which had claimed so many victims, the General Assembly of the United Nations proclaimed on 10 December 1948 the Universal Declaration of Human Rights as "a common standard of achievement for all peoples and all nations".**

**The Declaration, a short text of 30 articles, is partly inspired by earlier models such as the English and American Bills of Rights, the American Declaration of Independence, and the French Declaration of the Rights of Man and the Citizen of 1789. It proclaims, notably, that all human beings are born free and equal in dignity and rights; that everyone has the right to life; that no one shall be held in slavery nor subjected to torture; that all are equal before the law and are entitled to its protection; that everyone has the right to freedom of thought, conscience, religion, opinion, peaceful assembly and association; everyone has the right to work, to just and favourable conditions of work, to social security; the right to form and join trade unions; the right to rest and leisure, to holidays with pay, to an adequate standard of living, to medical care, to education; motherhood and childhood are entitled to special care and assistance; that everyone has duties to the community, etc.**

**The Universal Declaration of Human Rights has been criticized on the grounds that it is too general. However in 1966 the United Nations adopted two international covenants, the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights. These have been ratified by over 60 countries and came into effect in 1976. Among the rights formulated by these texts are the following: that all peoples have the right of self-determination, to freely dispose of their natural wealth and resources, to freely determine their political status and freely pursue their economic, social and cultural development; they also stress the equality of men's and women's rights, the right to strike, provided that it is exercised in conformity with the laws of the particular country, the right to participate in cultural life, to enjoy the benefits of scientific progress, etc.**

**But human rights must always come to terms with the evolution of human societies. Today we are witnessing the emergence of what the Director-General of Unesco has termed "the third generation of human rights". These include the right to development, to a healthy and ecologically balanced environment, to peace, to the enjoyment of the common heritage of mankind. These "rights of solidarity" can only be achieved by a common effort from all—individuals, States and other public and private institutions.**

# A Third World view of Human Rights

***by Radhika Coomaraswamy***

IN many ways, the human rights movement has reached a crossroads. The success of its endeavours is closely related to its ability to meet the challenge posed by developments in the Third World. Its growth and transformation will greatly depend on its capacity to capture the imagination of young people in these societies. The texture and fabric of its development will be affected by the manner in which it handles the sensitive issue of women's rights in diverse cultural settings.

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**RADHIKA COOMARASWAMY** *is a Sri Lankan lawyer who has specialized in human rights research and education.*

To a great extent, the Third World has not played a creative part in the formulation and implementation of human rights. Though human rights embody many tenets found in all the world's cultures, the theoretical origin of the human rights movement are distinctively Western. The pillar concepts of the movement—liberty, equality, material welfare and self-determination—are formulated in the manner envisioned by the modern movements of nationalism, liberalism and socialism. These movements originated in the West but have influenced political values throughout the world.

These historical origins alone have made many cultural nationalists advocate the rejection of the human rights movement as a universal norm. Violations of human rights are justified in terms of the illegitimacy of certain human rights values in the Third World context. This remains a major crisis for the human rights movement in the latter half of the twentieth century.

What approach should be adopted to reconcile the tension between the inherited tradition of human rights and major developments in the non-Western world? It is inevitable that any such reappraisal must begin with a view of history as a collective experience, a synthetic process of human rights learning and growth. At present there is a need for Third World insights into human rights protection, but the process ▶

Dogon ancestor figure (Mali). Photo Eliot Elisofon, *Life* © Time Inc., New York.

must be a creative one and not a denial of the very concept of human rights; a process of supplementation and not of derogation.

The problem posed by this polemic between North and South has two aspects. The first is the reconciliation of non-Western cultural values with the basic concepts of human rights. The second is the integration of the "development" experience into the norms and structures of human rights protection. One method of moving towards resolution of these problems would be to regard human rights not as ends in themselves but as a process which implies a certain approach to law, politics and economics. It should be seen as an approach which accentuates the human dilemma above other considerations.

The human rights movement cannot immediately be removed from the context of its own history and structures. To do so would be to deny it content and increase ambiguity. Instead, the process of reconciliation should be seen as being dialectical. On the one hand, it should encourage Third World societies to articulate their values at this period in their history. This would force them to come to terms with the norms of the international tradition of human rights in the light of their particular historical experiences. On the other hand, the process of reconciliation should compel the human rights movement to reach beyond the confines of past historical experience, both conceptually and factually, and to search for alternative visions and institutions which may better capture the imagination of all the world's societies.

The success of the human rights movement in the future of developing societies is greatly dependent on its ability to convince the youth of these nations that human rights must be an important, if not primary concern of any political ideology. This becomes particularly important when we consider that the world, whether North or South, is currently experiencing a "crisis of morality".

Conflicting values and dual systems of life-style in developing societies have served to liberate people from fixed stations and hierarchies. And yet, the marketplace of values and ideas may in fact have created a moral vacuum which will inhibit youthful interest in causes such as human rights. To escape this moral dilemma created by modernist impulses, youthful insight may find realism and materialism superior to the call for social action required by those dedicated to human rights protection. Or, they may seek to avoid the moral dilemmas of the future by clutching on to the structures of the past which have been the basis for their identity and security. Neither of these reactions will dynamically serve to further the cause of human rights.

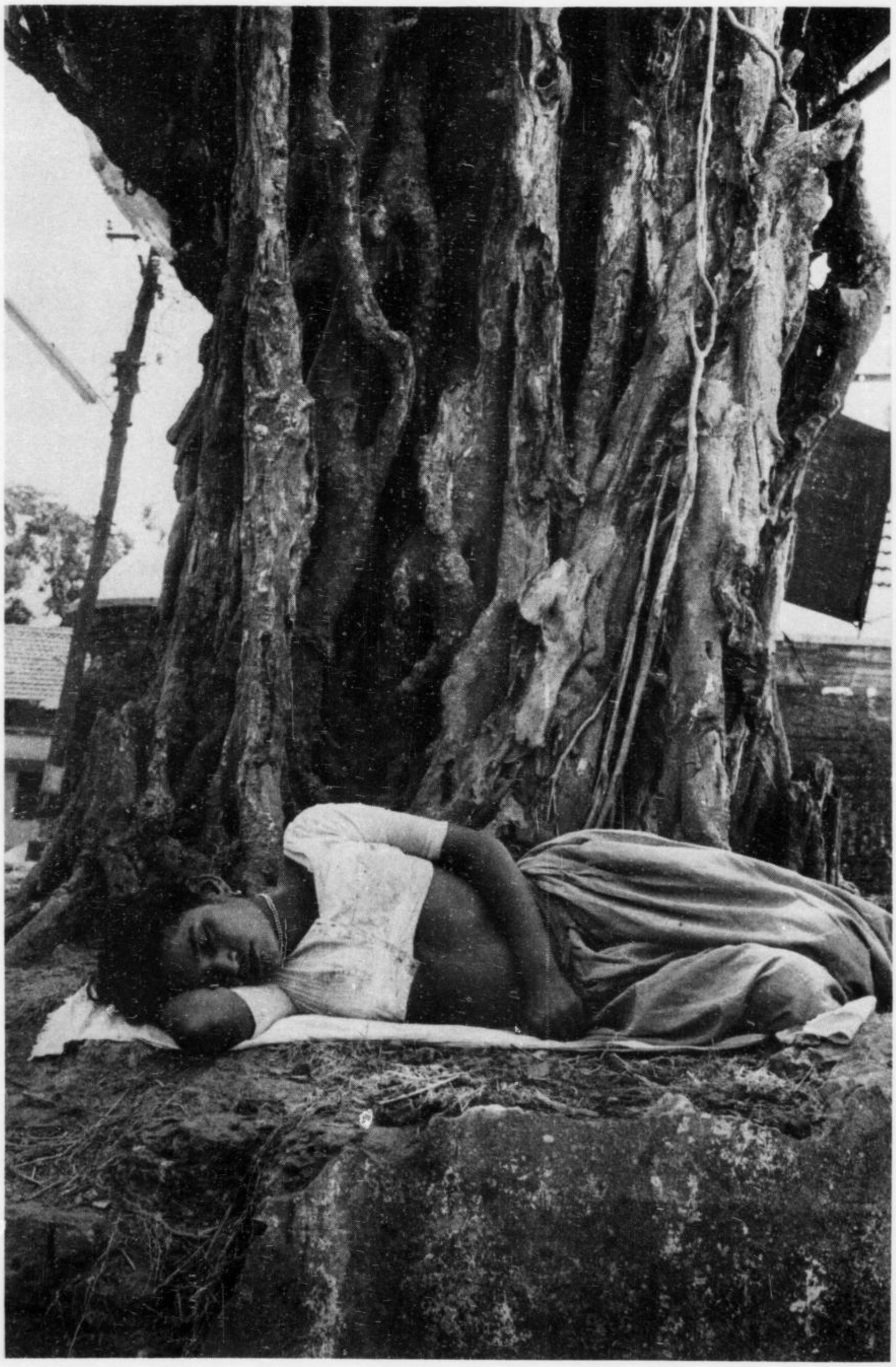
It is therefore imperative that teaching human rights be considered a fundamental aspect of the school curriculum. Without such "consciousness-raising", the concerns of human rights will be lost in the modern marketplace of competing values and ideas.

And yet, care must be taken to ensure that the idealistic impulses behind the human rights movement do not remove the teaching of its tenets to the level of religion or metaphysics. The need to protect human rights in a realistic political and cultural context must be the basic thrust of any such teaching exercise.

Though women's rights have received much attention in the Western world, it is a more fundamental but complex dilemma in developing societies. One the one hand, the problem is political, legal and economic, especially in relation to the so-called "modern" sector. The human rights approach to women's rights has most relevance to this sector where the structure and style of the industrial establishment are based on those either in Western Europe or the Communist countries of Eastern Europe.

The "techno-rational" principles of management and policy-making are especially relevant to the structures of pro-

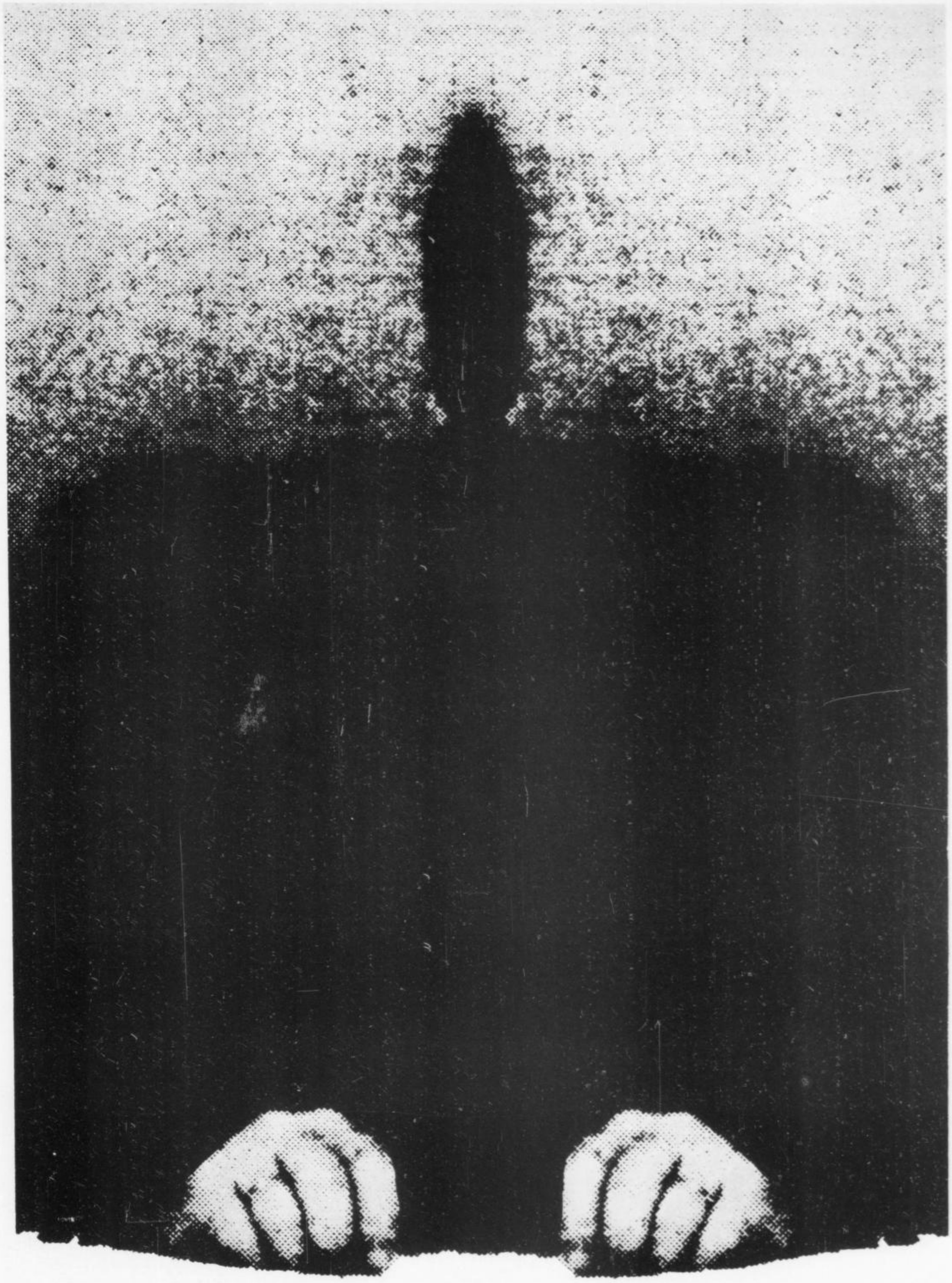
## *Should human rights be part of the school curriculum?*



*The level of a people's civilization can be measured by the social position occupied by its women.*

**Domingo Faustino Sarmiento (1811-1888)**

**India. Photo © Jacques Minassian, Paris.**



*Power is a multi-dimensional concept and consists of different components. These, we contend, are of five basic types. Firstly, there is* **physical violence** *such as used by armies, police forces and informal groups or even individual political extremists and terrorists. The second and third components are of an economic character: power deriving from* **coalitions and monopoloid organizations;** *and power deriving from the* **possession of scarce resources,** *whether natural resources or human qualities (e.g. intelligence, leadership or personal attractiveness). A fourth component is the power of* **custom or law,** *sometimes recognized as a legal basis for certain types of behaviour. The fifth element we propose to identify is the power of* **ideas,** *rational or ethical.*

**Jan Tinbergen**

***Man and his Imprint.*** **Serigraph © Roman Cieslewicz, Paris.**

▶tection formulated and implemented by the human rights movement. As the organizations in the modern sector are prototypes of their European counterparts, the human rights issues greatly resemble those which are present in the developed societies. The issues are, nevertheless, accentuated because of a limited sharing of resources.

On another level, the problem of women's rights in developing societies has enormous social and psychological dimensions. In many ways, the issues of women's rights have accentuated the constant tension between tradition and modernity. Women have been classically regarded as the bearers of tradition from one generation to another. The transformation of their role in society is seen as an erosion of the foundations of traditional cultures. When the alternative to tradition is westernization, there is an in-built cultural prejudice which is often the justification for the denial of equal rights for women. There is an important and fundamental need to extricate women's rights from the constraint of traditional ideas and institutions, while acknowledging the creative role that such concepts may play in other areas of social and political life.

These brief remarks cannot, of course, convey the many dilemmas created by human rights problems in the context of Third World development. One cannot even begin to address the concrete issues of human rights protection in such areas as criminal procedure, free speech, race-relations, women's rights, political and economic rights etc... In all these areas difficult questions continue to persist, questions which are qualitatively different from the issues as they exist in the North Atlantic States. The resolution of these problems even within the normative framework of human rights protection may differ in content and procedure from those traditionally accepted by advocates of human rights who have been trained in the political-legal culture of the West.

But the fundamental question is not whether the resolution of human rights problems is different in the Third World but whether the process of resolution will play a creative or derogative role in the growth and development of human rights. The essential quest is not only for the articulation of relevant *ends* but for the creation of *means* both at the national and international level which will ensure a positive and dynamic interaction between the past and the present, North and South, tradition and modernity, idealism and realpolitik.

Such a dynamic may turn destructive, disturbing the fragile network of human rights protection which has been built up over the years. But, if articulated and encouraged in a rational, and deliberate manner, it may prove to be a creative and innovative exercise. The first step in this process must be a call to "open-mindedness", not only on the part of traditional, developing societies but also on the part of the international human rights movement.

Without evaluating the development experience and without coming to terms with varying cultural viewpoints, the movement is likely to be delegitimized or fragmented—neither of which will help forward the main purpose behind the human rights movement, ie. the basic amelioration of the fundamental human condition.

■ **Radhika Coomaraswamy**

# Human Rights *are* universal

## *The individuality and independence of a culture must start with the equality of man*

### *by Yoshikazu Sakamoto*

ALTHOUGH the universal dimension of the concept of human rights is today generally accepted without question—the declaration adopted in 1948 by an overwhelming majority of United Nations Member States was, after all, entitled the *Universal* Declaration of Human Rights—it must be recognized that in certain of its aspects this concept is the product of Western civilization. When, towards the end of the nineteenth century, Japan began to "modernize" and a number of new political and legislative notions were introduced to the country, no word existed in Japanese for "human rights" and a new term had to be invented. This is just one example of a non-Western cultural tradition in which no equivalent of this concept existed.

This startling contrast points immediately to the problem inherent in the universalization of such a concept. Clearly, the penetration of the non-Western world by this Western concept was brought about under the influence of Western colonialism. In other words, the "right of equality", which is one of the fundamental human rights, was propagated throughout the non-Western world within the context of a flagrantly unequal, dominator/dominated relationship.

This paradoxical situation evoked two kinds of reaction in the non-Western world. The first of these was to take advantage of this notion of the "right to equality" and, using it as a lever, to criticize, indeed to rise up against the reality of Western domination. This was an effective way of showing up the contradictions in the Western standpoint, but it also implied acceptance of Western values, a situation that involved other contradictions. Furthermore, even if this kind of reasoning was more or less acceptable to the often Western-educated élites in the developing countries, it was not necessarily effective in mobilizing the support of the peoples of these countries.

The second form of reaction which became apparent in a number of Third World countries was more firmly rooted in the general public. This was an out and out nationalism which denied the universality of Western values and, exalting traditional indigenous values, attempted to strengthen and preserve its own political and cultural existence.

Although such an affirmation of popular sentiment has its positive aspects, going beyond mere rejection of Western cultural domination, just like the affirmation of the universality of Western values it also has its dangers. An extreme example is the existence in certain developing countries of governmental policies that are repressive *vis-à-vis* human rights. In face of pressure from Western countries and from international organizations anxious to defend the universality of human rights, it is to be expected that a reaction of rejection should set in against a concept considered to be both Western and ill-adapted to the realities of national life. The notions of "independence" and "non-interference in internal affairs" are distorted and used to counter outside pressures in defence of human rights.

Thus, just as the Western notion of universality was often used for political ends to rationalize colonial domination, it is quite common to find the notion of non-Western specificity being used by those who hold the reins of power to justify their domination of the people. In other words, both Western "universalism" and non-Western "specificity" are capable of being distorted in such ▶

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**YOSHIKAZU SAKAMOTO,** *of Japan, is Professor of International Politics at the Faculty of Law, University of Tokyo. He is the author of many articles on problems of international relations, disarmament and peace, and of several books including* Peace—Its Realities and Research *(Mainichi Press, Tokyo, 1976). Since 1979 he has been Secretary General of the International Peace Research Association.*

*Three things sustain man in this world: sowing, harvesting, eating.*
**Wolof proverb**

**Preparing the ground in Tanzania. Photo International Labour Office, Geneva.**

a way as to prevent international application of human rights.

Today this problem has become more acute than ever. Never before has the principle of the rights of man been so widely disseminated. And never before have the peoples of the non-Western world been so eager in their search for their own identity or so positive in their affirmation of their independence and their cultural originality.

In stressing their diversity and their cultural originality, even where human rights are concerned, non-Western societies are also underlining the difference that exists between their way of thinking and that of the West. Examination of the place of women in society, for example, reveals that many cultures attach great importance to the distinctions between the social roles of men and women. In some societies too, true wisdom is held to be the adjunct of the gerontocracy, and the young, even those that show promise, can never attain the status of decision-makers.

Relationships between the individual and the group also vary. In many societies loyalty to the group or the organization takes precedence over the rights of the individual, in contrast to the idea prevalent in Western societies that groups or organizations owe their existence to acts of free will on the part of the individuals who compose them and that they are therefore a means of expressing the rights of the individual.

Again, there are many societies with a sort of dualistic structure in which the laws and constitution uphold the Western-style notions of the universality of human rights whereas social rules and customs keep alive

## *Does the logic of cultural relativism imply denial of the universality of human rights?*

traditional indigenous standards of value. This dualism merits deeper analysis. On the one hand, many non-Western cultures undoubtedly have specific values which can neither be assessed nor explained in terms of Western criteria; on the other hand, there is the danger that, in the name of these specific values, authoritarian oppression and violation of human rights will become entrenched.

One approach, which has come to be known as cultural relativism, involves recognition of the specific values of each culture and rejection of the notion of a hierarchical scale of values. This line of thought has done much to undermine the concept of a world centred on Europe, that is to say the presupposition of the superiority of European culture. But if the basic reasoning of cultural relativism were to be taken to its logical conclusion, it would, it might be thought, lead to anarchy in world value systems. If this were the case, a universal system of values based on rejection of the violation of human rights by the arbitrary exercise of power, would have no *raison d'être.*

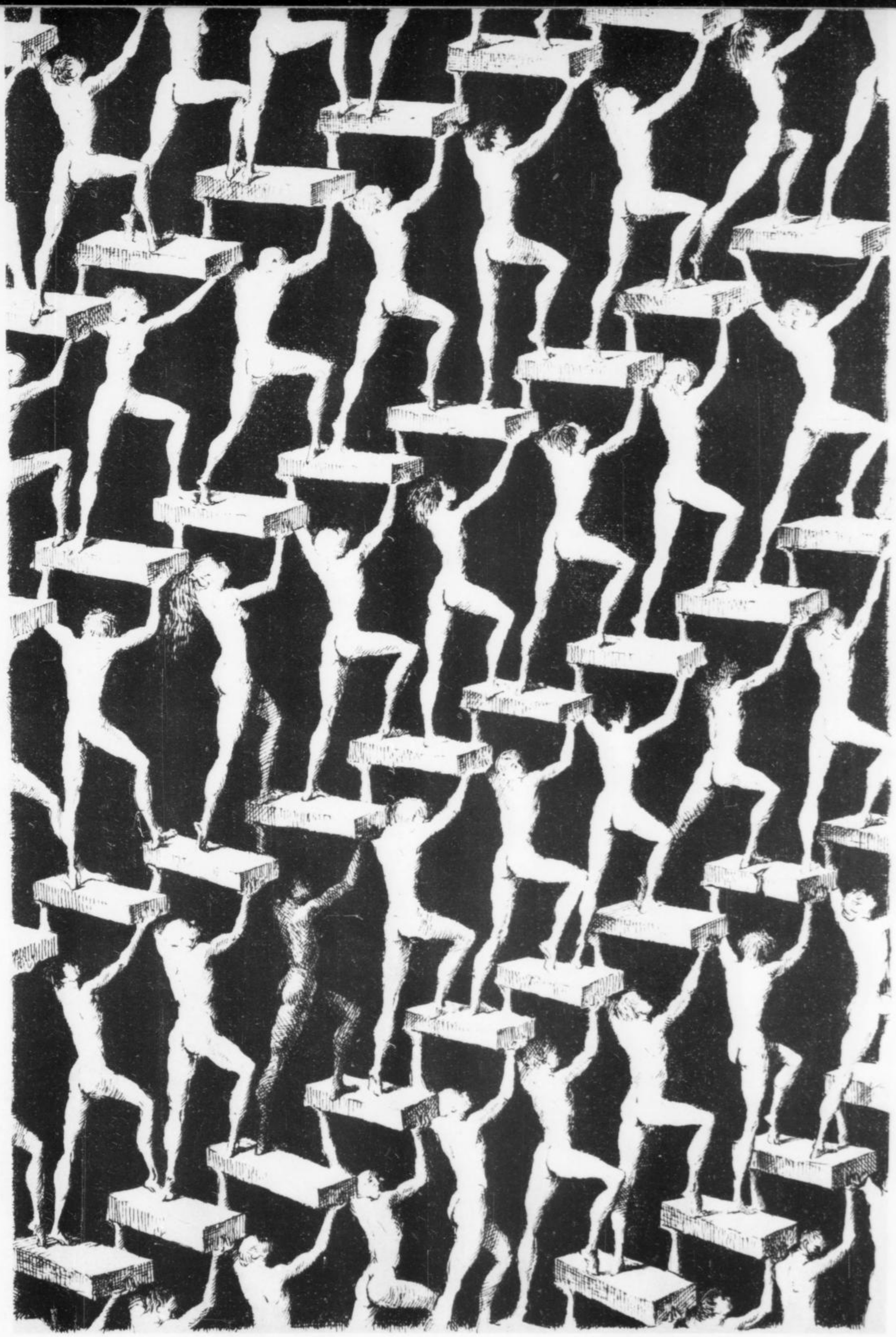
This might lead one to think that the logic of cultural relativism leads inevitably to denial of the universality of human rights. But is this really the case? A deeper analysis of the meaning of cultural relativism gives quite another picture.

Underlying cultural relativism, with its rejection of cultural imperialism, is the notion that cultures should be classified not in a hierarchy with Western culture at the head, but as separate systems possessing equal values. Why this affirmation of the equality of different cultures? Is it not because every culture is based on man and our starting point is that all men have equal rights? If we accept the argument that the equality of cultures is based on the equality of men, we can only accept this equality of cultures if it is based on recognition by the different cultures of the equality of men. In other words, cultures, with all their relativity and specificity, are fundamentally equal.

***The subjects of earlier tyrannies recognized their slavery in the overt controls which restricted their physical movements, and by the terror which the minions of authority inspired in them, whereas the citizens of the future, manipulated at the very sources of their being, may love their servitude and call it freedom.***

**William Leiss**

**Automatons. Drawing by Guillotin © Encre Libre, Paris.**



When a culture denies the fundamental equality of men, that is to say the equality of the rights of men, it lays itself open to international criticism. It is, of course, desirable for this equality to find expression, to take material shape in the most widely diverse forms freely chosen by the members of each society. But this diversity must always be based on the first premiss of equal rights. The individuality and independence of a culture must take as its starting point the equality of men. And this universal equality of men, from which spring cultural independence and diversity, is one and the same thing as the universality of the rights of man.

■ **Yoshikazu Sakamoto**

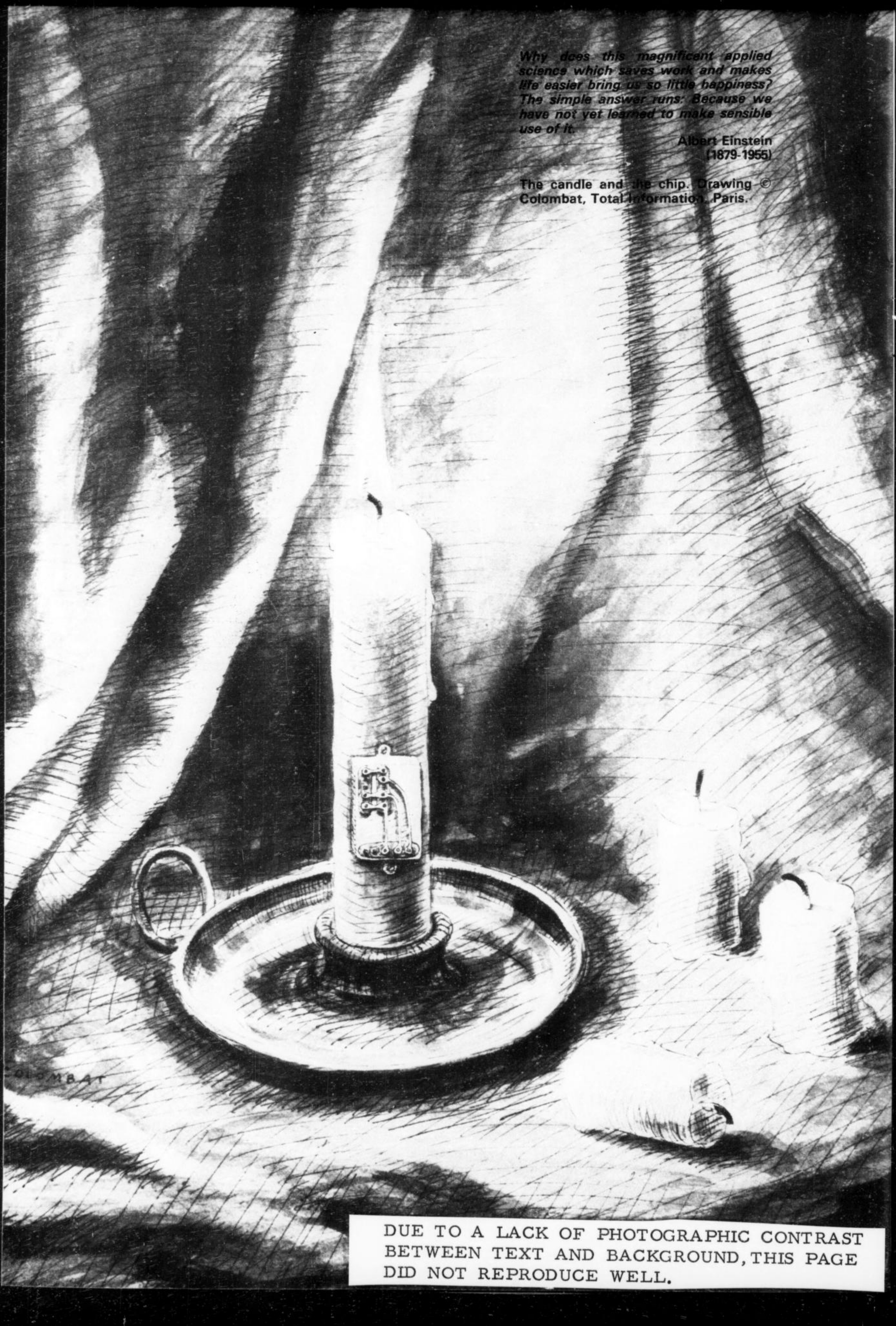
***The ideal condition for mankind is one in which no one is rich, no one wants to become richer, and no one is afraid of being left behind by those who are striving to advance.***

**John Stuart Mill**
**(1806-1873)**

**Stairway to the stars. Drawing © Gourmelin, Paris.**

*Why does this magnificent applied science which saves work and makes life easier bring us so little happiness? The simple answer runs: Because we have not yet learned to make sensible use of it.*

Albert Einstein
(1879-1955)




The candle and the chip. Drawing © Colombat, Total Information, Paris.

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# SCIENCE, TECHNOLOGY, COMMUNICATION

"SCIENCE and technology are said to be the cause of most of our ills today. By conquering disease and extending life they have been responsible for an explosion of the population. By increasing productivity and raising living standards they have been responsible for depleting resources and polluting nature. By expanding knowledge and emphasizing efficiency they have been responsible for deflating myths and diminishing man. And by placing enormous power in the hands of man they have brought him to the brink of destruction."

This was how nuclear chemist and Nobel laureate Glenn Seaborg once summed up the current popular case against science and technology. Yet though valuable as an indication of public unease about what scientists and technologists are doing, this kind of criticism is based on a misunderstanding of the nature of both science and technology. The corpus of scientific knowledge is not, as the layman tends to think, a vast compilation of coherent facts each neatly attached to the next in a logical sequence. Instead, whenever new facts are discovered, old ones have to be eliminated. The scientist is always fundamentally in error. Science is based on uncertainty; it is the pursuit of the apparently unknowable and it is precisely for this reason that it is so inextricably linked with other aspects of human culture.

Technology, the handmaiden of science, is founded, on the contrary, on what might be called hard mechanical facts; it is at the moment of application that it comes up against a host of uncontrollable variables and uncertainty creeps in. And there is no warning feedback, no means of telling early enough to alter course when a new technology is being wrongly applied.

Is there no way in which we can eliminate the uncertainty factor in the application of technology? Cannot new indicators be devised that will give early warning of possible misapplications?

Curiously enough, the problems of the impact of science and technology on man and society are most starkly revealed in the field in which, over the past decade, the most astounding advances have been achieved—communications. Direct broadcast satellites, videodiscs and videocassettes, cable television, teletext and videotex, open up immense possibilities for good or for ill. These new communication technologies offer broadcasters direct access to the homes of millions of people throughout the world. Will they be used to subject the world to the cultural domination of a handful of great powers? They can also offer the television viewer or radio listener the possibility of a very wide range of different programmes and of an instant and direct two-way dialogue with the broadcasters. Will this mean that, at last, the ordinary man will be able to monitor and influence the men, the machines and the events on which his destiny depends?

# Barren soil

## *For technology transplants to 'take' the ground must be carefully prepared*

*by Ali A. Mazrui*

TECHNOLOGY transfer is a comprehensive term which encompasses both short-term and longterm technological movements, from computers on lease to African countries to the establishment of local institutes of technology. What fits and what does not fit is subsumed under "technology transfer".

In contrast, "technology transplant" borrows a metaphor from biology to imply the need for receptivity in the host body. Some compatibility is needed between the thing "transplanted" (be it a heart or a seed) and the recipient.

Our first proposition in this assessment is that there has been a considerable amount of technology transfer to the Third World in the last thirty years—but very little technology transplant. Especially in Africa very little of what has been transferred has in fact been successfully transplanted. Very little has taken roots. The question is: Why?

We propose to argue (with special reference to Africa) that while the normative climate is favourable to technology transplant, the structural and sociological soil is still relatively barren. While indeed there is interest in, and enthusiasm for, a technological culture, the actual sociological soil still tends to reject what is being transplanted. Let us look at these two parts of the argument more closely.

The climate of opinion in much of the Third World favours moves towards "modernization", "industrialization", more efficient "rural development" and faster modes of travel. Apart from a few poets and philosophers, there are no major ▶

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**ALI A. MAZRUI,** *of Kenya, is Research Professor at the University of Jos in Nigeria, and Professor of Political Science and of Afro-American and African Studies at the University of Michigan, Ann Arbor. He is the author of* A World Federation of Cultures: An African Perspective *(1976),* Africa's International Relations *(1977) and* Political Values and the Educated Class in Africa *(1978).*

▶agrarian movements opposed to industrialism and technology change.

India loves and reveres the late Mahatma Gandhi, but even those contemporary Indians who favour cottage industries often tend to see them more as an additional developmental strategy, rather than as an alternative to the big trusts like the Tatas and the steel industries. The more militant economic Gandhians (urging a return to economic simplicity) have so far had little impact on policy or indeed on organized mass opinion.

Africa and the West Indies have also produced from time to time dedicated economic primitivists. The whole *négritude* school in Africa and the West Indies has at times included nostalgia for the economic simplicity of the African past. As the poet and politician Aimé Césaire of Martinique once brilliantly put it:

...Eia for those who invented nothing
For those who have never discovered...
For those who explored nothing...
Eia for joy
Eia for grief at the udders of reincarnated tears...
My Negritude is neither a tower nor a cathedral
It thrusts into the red flesh of the soil...
(Return to my Native Land)

Césaire revelled in the non-technicalness of original African cultures.

Africa's most distinguished champion of *négritude* is Léopold Senghor. But although Senghor was President of Senegal for more than twenty years, he did not embark on a programme of revived simplicity. On the contrary, official policy in Senegal under Senghor was in the direction of an expanding industrial and monetary sector.

What all this means is that the religion of industrialism is not in danger in the Third World. Even countries like Burma and the People's Republic of China—which turned their backs for a while on the lure of Western technology—have more recently shown signs of renewed fascination with that technology.

It is because of these considerations that the normative climate for technology transplant appears, at least on first estimate, favourable in most of the Third World. Parents are eager to send their children to Western-type schools; governments are eager to formulate five-year plans; there are technical experts galore temporarily imported from outside. With such a favourable climate, why is not the plant of technology taking roots? Yes, why? This is what brings us back to the metaphor of a barren soil. We see the soil in terms of the sociology of the society in relation to its structural links with the outside world. This soil is not congenial. A series of contradictions are part of the explanation.

Firstly, are parts of the Third World experiencing cultural Westernization without economic modernization? Is there a transmission of Western *consumption* patterns without a transmission of Western *production* techniques? Is there a craze for Western technological gadgets without a programme of how to produce them locally?

Consumption patterns are a reflection of values, either new or old. Production techniques would have been a reflection of skills. The West has been more successful in popularizing its values and tastes than in transplanting its skills. This imbalance has often been deliberate. Creating a taste for Western goods without a local capability for producing them was often more profitable for the West than exporting both tastes and techniques.

Even in exporting capitalism as a system the West has been more effective in exporting the profit motive than the entrepreneurial skills. The profit motive is a desire for profit. It is not necessarily to be skilled in securing it.

African businessmen may be eager enough to maximize their returns. But many are more comfortable sitting on Boards of Directors than trying out new trading techniques. Risk-taking as an aspect of creative entrepreneurship is often underdeveloped in the Third World. Easy money and safe investment are preferred.

***Is the West transmitting its consumption patterns rather than its production techniques?***

Even the Western puritanical principle of "make money—but do not spend it," is honoured in the breach. Money is made—but promptly spent ostentatiously. Reinvestment in better equipment or more effective techniques is seldom elevated to a priority. When new equipment is bought it is the wrong equipment.

As for the Protestant principle of "industriousness" (or the work ethic) as a moral principle, this is often more characteristic of African peasants than of the African bourgeoisie.

The latter have indeed been converted to the profit motive in many parts of Africa, but even when they are Protestants by religion they have not necessarily been converted to the "Protestant ethic" in the classical economic sense that Max Weber has reminded us about in his study, *The Protestant Ethic and the Spirit of Capitalism*. The profit motive is strong in much of Africa, but entrepreneurship is still weak. This is part of the barrenness of the sociological soil for effective transplantation of relevant technology. ▶

*No, we do not want to overtake anyone. We want to walk, day and night, for all time, in the company of all men.*

**Frantz Fanon**
**(1925-1961)**

**Bringing in the rice harvest, Indonesia. Photo Georg Gerster © Rapho, Paris.**

*Time is the field of human development.*

**Karl Marx**
**(1818-1883)**

**Villagers of the Mekong delta, Socialist Republic of Viet-Nam. Photo Raymond Depardon © Magnum, Paris.**

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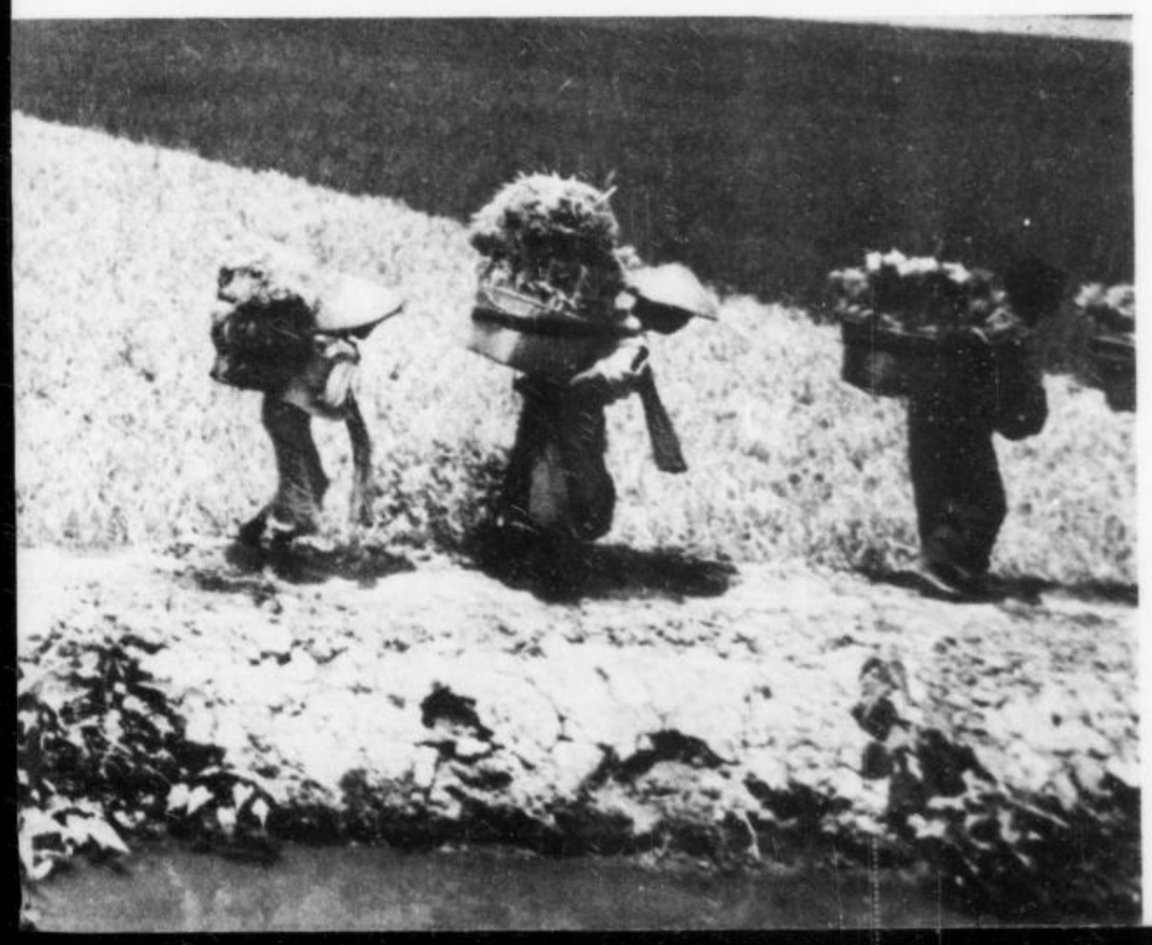
*For I remember stopping by the way*
*To watch a Potter thumbing his wet Clay:*
*And with its all-obliterated Tongue*
*It murmured—Gently, Brother, gently, pray!*

**Omar Khayyam**
**(1048-1122)**

**Throwing a pot. Photo Leo Pelissier © Rapho, Paris.**



Even the educational systems in Africa are better at transmitting Western values and tastes than Western skills and techniques. The schools bequeathed by colonialism are instruments of cultural re-orientation and not instruments of economic transformation. In the classroom there is acculturation of the arts of conversation rather than the transfer of techniques of production.

African universities are on the whole designed to produce communicators rather than creators, masters of verbal and literary "skills", rather than practitioners of the craft of innovation. Colonialism preferred imitative communicators to innovative creators. Colonial schools were designed accordingly.

Scientism rather than the scientific spirit emerged out of colonial educational structures. The ideology of "modern scientism" rather than the principle of genuine scientificity held sway on graduation day and beyond. Africans were trained to be awed by science rather than to master it, to be impressed by Western scientific achievements rather than to cultivate their own scientific self-confidence. The ideology of scientism made Africans not only awed by Western science but helplessly dependent upon it psychologically. The stage was set for long-term African technological dependency as well.

These are some of the contradictions which have gone towards making the post-colonial soil so inhospitable for effective technology transplantation. The climate of opinion is still in favour of technological development, but fundamental changes are needed sociologically and structurally.

To carry the metaphor of the soil a stage further, fertilizers are needed to help enrich the soil and enable the plant of new technology to take roots. It is not enough to complain about North-South abuses and the genuine excesses of transnational corporations. It is not enough to focus on limitations of copyright and patent, or excesses of exploitation, real as these problems are. Sooner or later we have to confront the deficiencies of the host soil—those caused by colonial distortions and those caused by indigenous cultural divergences. What may be at stake are factors which range from motivation patterns to educational systems, from a distorted Protestant ethic to the imbalances of the world economy.

The quest for a New International Technological Order must begin with the issue of fertilizers—technological fertilizers to enrich the host soil in the Third World and make it more receptive to the genuine transplantation of the skills of production and the craft of innovation.

■ Ali A. Mazrui

# Predicting the unpredictable

## *Is it possible to identify the variables that trigger surprise and change?*

***by Crawford S. Holling***

TODAY'S rate and scale of change is perceived by many to be transcending the adaptive capacity of individuals, governments, industry, and nature. Caught in the currents of turbulence, man searches for a generic cause to give reason to the unreasonable and hence a basis for action. Like Fourasti's bewildered bee on a moving train, man appears to have forgotten where he comes from and has lost the sense of where he is going.

Many in positions of influence and responsibility share a concern for the world in structural transition, but are frustrated in their efforts to decide and govern wisely by the increasing inability of traditional planning mechanisms to deliver the needed comprehension and options. At the same time, fundamental paradoxes are emerging to challenge traditional concepts of science and scholarship. Those traditions, which have sought typically to increase efficiency, ensure constancy, maintain stability, and improve prediction, have often shown that the very effectiveness of the pursuit has generated paradoxes that suggest the need for a deeper understanding of structural change.

In increasing the efficiency of a system, for example, we have often increased its fragility and vulnerability. In aiming to achieve constancy, we have frequently eliminated the role of variability as a way of testing, renewing, and maintaining a system's flexibility. Similarly, in seeking stability we have observed a constructive role for instability in maintaining the processes of self-enrichment, self-monitoring, and self-regulation. And while working to improve prediction techniques, we have encountered the issues of limits to prediction and the need for adaptation that explicitly recognizes the inevitability of failures and the unexpected.

My colleagues and I at the International Institute for Applied Systems Analysis, Austria, in collaboration with a number of national research institutes, have been exploring different concepts and perceptions of surprise, crisis, and change, in order to identify categories of surprise generated by the intersection of man, technology, and nature, and to define the ingredients for adaptive behaviour and management.

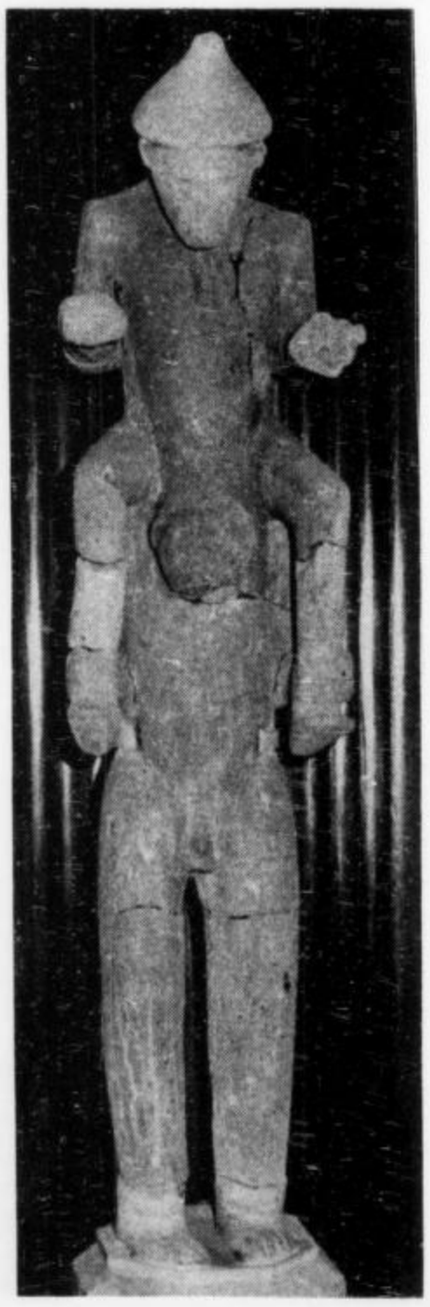
In each case the analysis focused on the links between the "natural" environmental system, the management institution(s), their policies and technological solutions, and society. Over twenty examples of resource management have been examined. Here I will emphasize five for illustrative purposes, analysing those key features that seem important for adaptive design.

For the cases that follow, we observed that all of the management policies succeeded over the short term; all failed over the longer term and produced a crisis; all owed the failures to success in reducing variability; some adapted successfully to failure while others did not.

• Suppression of spruce budworm populations in eastern Canada using insecticides preserved the pulp and paper industry and employment in the short term by partially protecting the forest. But that policy has left the forest and the economy more vulnerable to an outbreak of an intensity never experienced before.

• Effective protection and enhancement of salmon spawning on the west coast of North America is leading to more predictable success. But that has trig-

**CRAWFORD S. HOLLING,** *of Canada, is Director of the International Institute for Applied Systems Analysis (IIASA) at Laxenburg (Austria). Since 1967 he has been professor at the Institute of Animal Resource Ecology and in the Department of Zoology at the University of British Columbia. He is also a consultant in the Office of Biological Services, U.S. Fish and Wildlife Service, Washington, D.C., and was the first leader of IIASA's Ecology and Environment Project from 1973 to 1975.*



*Development means putting man on his feet.*

**Dom Helder Camara**

**Statuette of the Barriles culture, Panama, Dating from 300-500 A.D. Photo © National Institute of Culture and Leisure, Panama City.**

*That which we call modern is that perhaps which will not endure.*

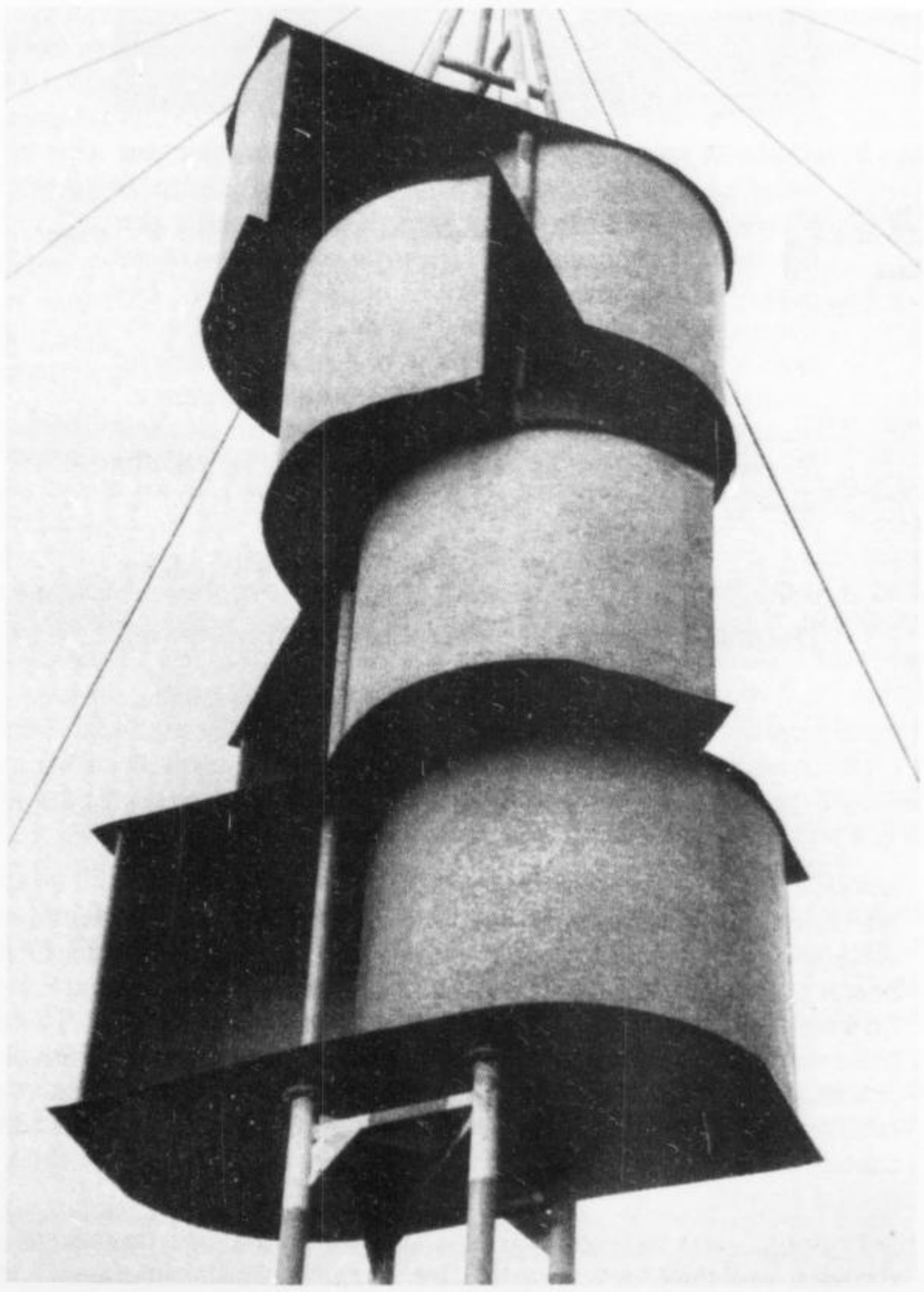
**Dante**
**(1265-1321)**

**Demolition of the Biltmore Hotel, Oklahoma City. Photo John Vowter © Rapho, Paris.**

***We have to overcome the complex of awe and fear which derives from the idea that "technology" is something beyond our grasp. We should know that technological development is not only that which has taken man to the moon or made satellite broadcasting possible; on the contrary, technological creation does not mean only making new things, but also finding new ways of making things which have been made already. We should realize that technological creation, innovation and adaptation can be developed not only by large industries but also by the medium-sized and small industries of our countries.***

**Roberto Salas Capriles**

**Wind-powered generator, Senegal. Photo © Christophe Naigeon, Paris.**



gered increased fishing and investment pressure, and less productive stocks are becoming extinct, leaving the fishing industry precariously dependent on a few enhanced stocks that are vulnerable to collapse.

• Forest fire suppression has reduced the probability of fire in national parks in the United States. But the consequence has been the accumulation of fuel to produce fires of an unprecedented extent and cost.

• Semi-arid savannah ecosystems have been turned into productive cattle grazing systems in the Sahel zone of Africa, southern and east Africa, the southern United States, northern India, and Australia. But because of changes in grass composition, an irreversible switch to woody vegetation is common and the systems have become highly susceptible to collapse, often triggered by drought.

• Malarial eradication programmes in Brazil, Egypt, Greece and Italy are brilliant examples of sophisticated understanding, combined with a style of implementation that has all the character of a military campaign. But elsewhere, where malaria was neither marginal nor at low endemic levels, the transient success has led to human populations with little immmunity, and mosquito vectors resistant to DDT. As a consequence, some countries have recently reported a thirty- to forty-fold increase in cases of malaria compared to 1969-70, endangering both public health and socio-economic development.

Two categories of "solution" appear when we compare our studies. One class is unforgiving of error; one forgiving. The use of insecticide to control insect populations in order to protect trees from defoliation or people from malaria requires a level of vigilance and efficiency of application that does not match well with the fallibility of man and his technology. In contrast, biological control, through the introduction of parasites, predators or diseases of pests, represents an effort to work through natural laws to generate dynamic responses to change that are self-regulating, self-monitoring, and self-correcting. Failure can still occur but it is typically localized and transient.

All the cases achieved their short-term objectives—maintain employment in the face of imminent destruction of the forest from an insect outbreak; reduce the frequency of forest fires; increase salmon populations; increase meat production; and decrease the incidence of malaria. But as a consequence, each system evolved into a qualitatively different one. That evolution took place in three areas. The socio-economic environment changed. More pulp ▶

▶ mills were built to exploit the protected spruce-balsam forests; more recreational demand was developed in the parks protected from fire; more efficient and extensive fisheries were developed to exploit salmon; more land was moved into cattle ranches on the savannahs; and more development was possible in malaria protected areas.

The management agencies also began to evolve. Operational agencies were formed to spray insects, fight fires, operate fish hatcheries, encourage cattle ranching, and reduce mosquito populations. Their goals shifted from socio-economic ones to those emphasizing operational efficiency; better and better aircraft, navigation and delivery systems to distribute insecticide; better and better ways to detect and control fires.

Evolution also occurred in the biophysical area, the consequence of which was not generally perceived. Success was achieved by reducing the variability of a target variable—the forest insect populations, the fire frequency, the salmon numbers, the cattle stock density, and the mosquito populations. The features of the biophysical environment, viewed implicitly as constants, gradually changed to produce a structurally different system.

Reduction of budworm populations to sustained moderate levels led to the accumulation and persistence of foliage over larger and larger areas. Any relaxation of vigilance could lead to an outbreak sometime, in a place where it could spread over enormous areas. Reduction of fire frequency led to accumulation of fuel and the closing of forest crowns, so that what once were modest ground fires affecting limited areas and causing minor tree mortality became catastrophic fires covering large areas and causing massive tree mortality.

Similarly, increased numbers of salmon led to an increase in the size and efficiency of fishing fleets and the gradual elimination of many natural stocks, thereby increasing vulnerability to unexpected events; maintenance of moderate numbers of cattle led to changes in grass composition toward species more vulnerable to drought and management error; persistent reduction in mosquitoes led to gradual increases in the number of people susceptible to the diseases and to mosquitoes resistant to insecticide. In short, the biophysical environment evolved into one that was more fragile, at a time when greater dependencies had developed in the socio-economic and institutional environment for continued success.

## *Can we design for change?*

I am not arguing in these examples against their original purposes to maintain employment or reduce the debilitating burden of disease. Nor am I even arguing for a blanket indictment of solutions that are unforgiving of error. At times that is all that is available. At times, they should be used but only to buy time for developing alternatives. The difficulty is that technological man is so good at making such techniques successful in the short term. Consequently, the need and motivation for continued exploration of alternatives succumbs to the simulacrum of success. When the inevitable crisis begins to be perceived, there is often no obvious direction to go except to continue as before, but more rigorously, more efficiently, and with bigger budgets. Policy changes typically occur in the face of crises but only when there are clearly understood options available. Delays in developing those alternatives shrink the domain of attainable alternatives.

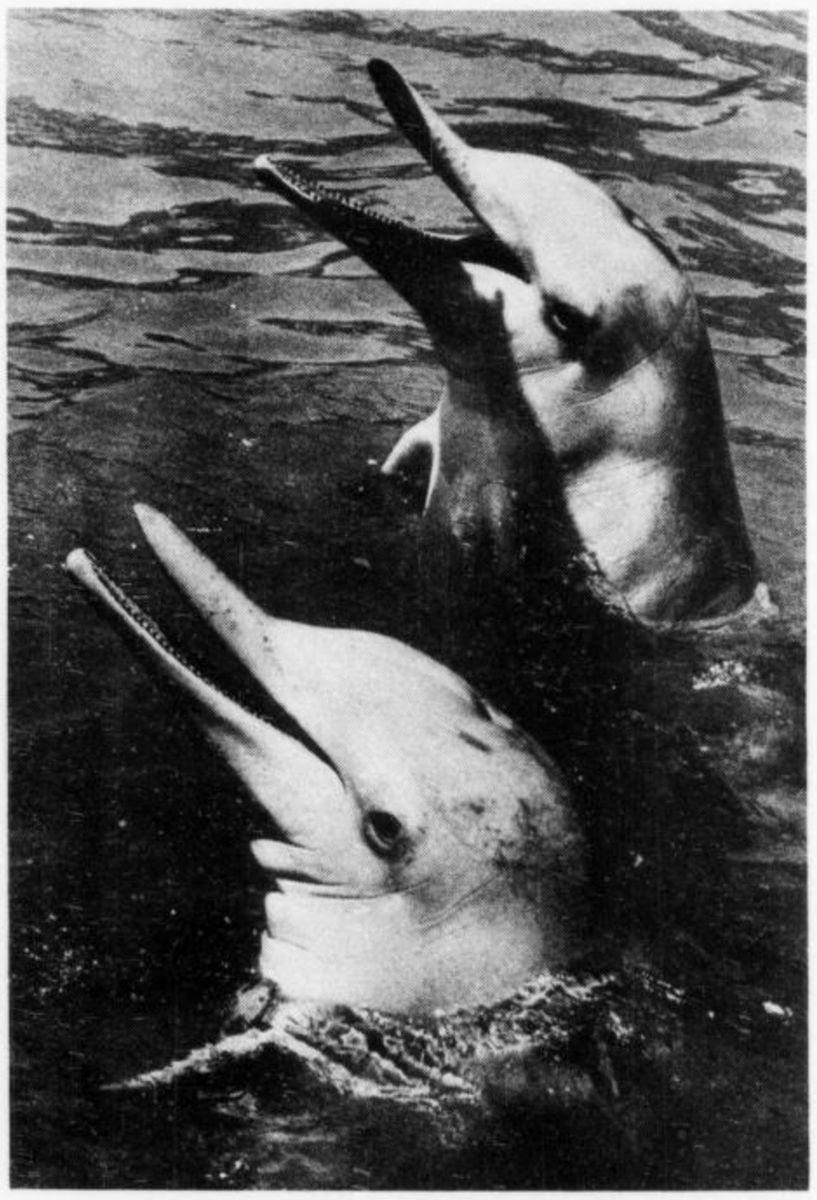
What is true for policy change is true for technological development. Many policies are derived from available technology, as well as from socio-economic incentives and penalties. If alternative technologies are not available, policy change is difficult. As control of budworm using insecticide seemed to be successful, programmes to develop biological control agents, pheromones, or even different harvesting methods withered. Currently there is no operational alternative to insecticide. The phase of technological development was frozen in the face of apparent success.

In his book *Disturbing the Universe,* the physicist Freeman Dyson makes the same point for the development of nuclear energy. He points out that effective technological developments proceed through trial-and-error generation and exploration of alternatives. He argues that this phase of exploration was foreclosed in nuclear energy development by a premature application of the accountants' criterion of cost effectiveness. The very real possibilities for designs that are more forgiving of error at a more manageable scale were not realized as the present technology became entrenched within government and industry. Rather than have the environmentalist join the accountant in a further smothering of innovation, it would seem wise to dramatically increase support for exploratory technology in critical areas of unforgiving technology.

Our analysis revealed that ecological systems do not evolve toward some climax or persistent equilibrium, but are dominated by a pattern in time and space of growth, quiescence, collapse, and renewal. Thus time and rates of change are central for understanding and developing adaptive, self-organizing designs.

The analysis of the biophysical part of our cases included three sets of biological variables, each operating at different speeds. For example, in the forest insect pest examples, they were the insect and its associated natural enemies, the foliage and the trees. Their speed is roughly related to their generation times—one year for the insect, eight years for the foliage, and over sixty years for the trees. As management began to restrict the variability of the target variable, parameters typically associated with slower variables began to change. Foliage in the budworm system accumulated at fairly high levels spread more homogeneously over space. These represent changes in variables and supposed parameters that are intermediate between the fastest and slowest. These changes are mediated by competition or natural selective processes. It is these changes that led to increased vulnerability of the systems to unexpected events.

Present forest fire policy in the US National Parks has recently changed radically, reverting to fire as the natural "manager" of



***The evil application of scientific discoveries has never been more rampant than at the present day. It is common knowledge, indeed, that a scientist can hardly make any new move in his research without having the military attempt to make use of it. The comparative psycho-physiology of dolphins, for example, is applied to naval warfare; anthropological studies are appropriated for "counter-insurgency" purposes; and special-sense physiologists see their findings used for the intellectual cruelty of techniques of sensory deprivation.***

**Joseph Needham**

**Dolphins. Photo Helen Fischer © Rapho, Paris.**

the forests. That dramatic adaptation was not made easily, and rested on the availability of an alternative policy and technologies to implement it, on a climate of understanding, and costs that were relatively modest compared to our other examples. But it might be equally important that the critical variable of fuel and forest tree composition changed at the slowest rate of all examples. It was some sixty years before the change became critical. I argue that twenty to thirty years, the turnover rate of employees, is the relevant time unit of change for a management institution. By the time the problem became critical, there was a new generation of experts and policy advisers who were more willing to recognize the failures of their predecessors. And of dominant importance, the slowness of change allowed the accumulation of knowledge of the processes involved and the communication of that understanding to a wide range of actors.

In contrast, changes in the budworm forest system proceeded at a faster rate. Insecticide spraying began on a large scale in the mid-1950s, with conditions of vulnerability building to a critical point by the early 1970s. That fifteen to twenty-year period was insufficient to accumulate and, most important, disseminate an understanding of the problem. Alternative policies and technologies were not developed, and the parents of the original policies were still central actors and defenders of the past. Adaptive change has been an agonizing process that is only now showing signs of occurring.

Although there are insufficient examples to generalize with confidence, our analysis suggests that one can identify key parameters and variables that trigger surprises. Unexpected events that occur rapidly require an emphasis on predictive capability. Those in the intermediate range require emphasis on adaptive capability (development of alternative policies, exploratory technology, searches for forgiving solutions). Those occurring slowly require an emphasis on monitoring and regulation.

Times of turbulence can be times for creativity and renewal. Man has always sailed on a sea of the unknown, encountering waves of technological innovation and stagnation, hope and despair, stasis and renaissance. Somehow, haltingly, he has thrived. Indeed, the brilliant technological developments of this century testify to man's inherent ability to adapt his tools to change. Since neither mankind nor nature is predictable, inevitably we will continue to be subject to unanticipated shocks from changes and the conflicts they generate. If we can comprehend the patterns of these changes, their causes and consequences, we will have the capability and flexibility to respond adaptively to the unexpected in ways that exploit the profound developments of science and technology for man's survival and renewal.

■ **Crawford S. Holling**

# By word of mouth

## *It is not often realized that the spoken word is still the most widely used medium of communication*

### *by Mohamed H. Abdulaziz*

COMMUNICATION through language is one of the greatest gifts bestowed on man. The civilizations of ancient times and of the Middle Ages looked upon language as an object of great mystery, even of magical power, able to create, cure or destroy. It provided the basis for philosophical debate on right and wrong, truth and falsehood, reality and deception, and was the source of the great debates of the conventionalist and the rationalist schools of thought.

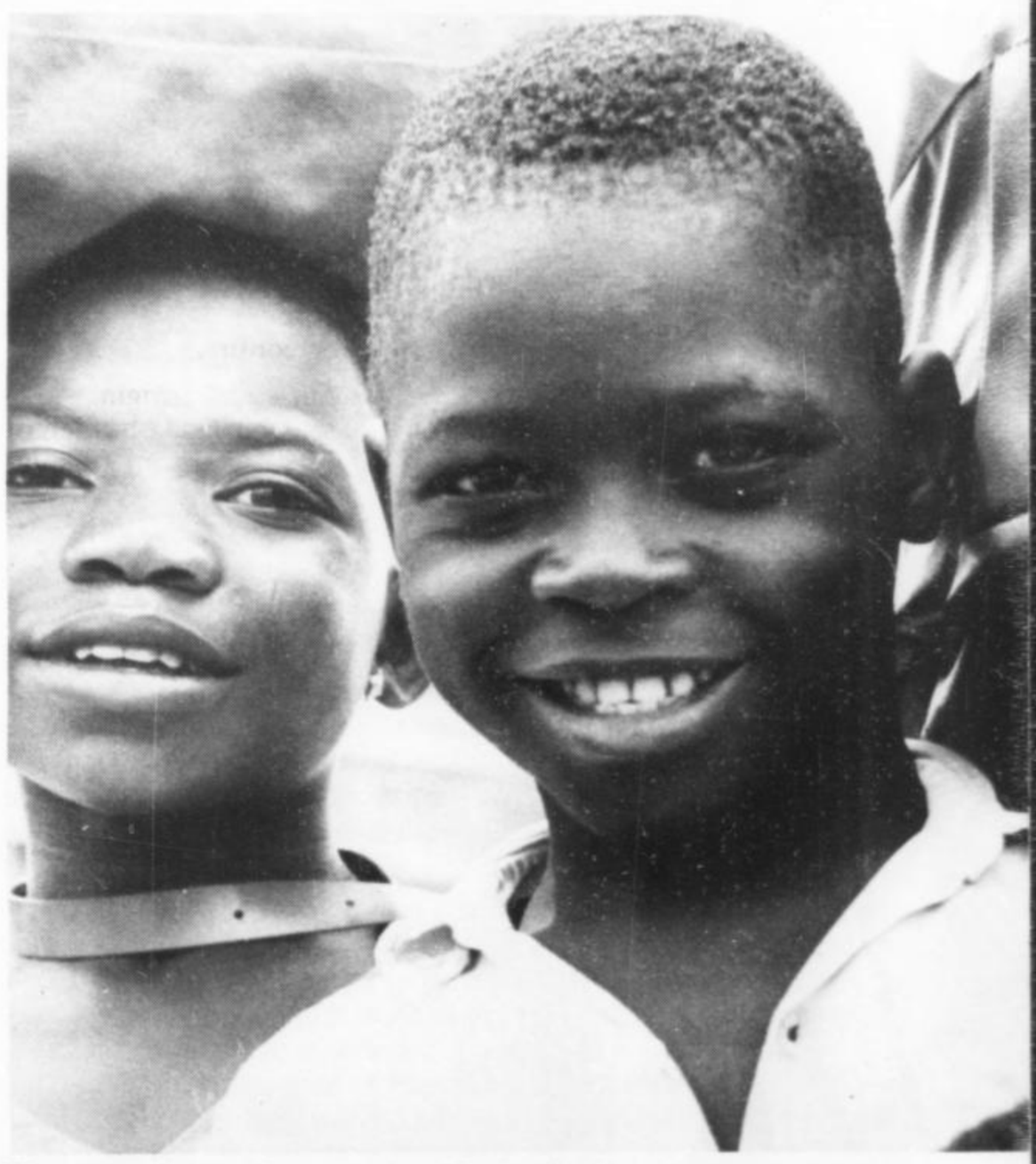
Language has also been the medium through which all human creative talent has been expressed, preserved and transmitted throughout history. All religious and ideological philosophies have relied heavily on the use of language and its mystical power. There is also the issue of the relationship between language and the cognitive process, language and culture and language and the world view.

Again, throughout history, language has been used as a basis for delimiting nation States and peoples and has been one of the main causes of nationalism with its positive and negative aspects. In fact, without language, it would be difficult to visualize the survival of human social organization.

Studies of oral communication, especially in the West, have until recently usually been undertaken from an anthropological point of view. As late as the 1950s, oral traditions were viewed by scholars within the framework of the concept of primitive pre-literate idealistic human forms of communication. The historical perspective of society as open to change was underplayed. A society such as that of the Masai of East Africa was looked upon as having exotic social, economic, ideological and religious organizations; it was indigenous and primitive. There was no empirical approach that looked at the phenomena from the point of view of the stimuli and responses of social change, affecting all human societies, though perhaps differently, in different periods of history based on observable and explainable conditions. It was not until the late 1950s when the "modernization" approach came to the fore that oral communication was viewed from a socio-psychological angle.

Among linguists oral language is now considered the basis of the data for both theoretical thinking and descriptive methodology. The myth of structurally superior and inferior languages, traditionally based on literate tradition, has been completely exploded. In its place a new outlook has come into being supported by linguists such as Noam Chomsky and his followers. The view now prevalent among the linguists is that "instead of the individual languages determining cognition, it is a univer- ▶

**MOHAMED HASSAN ABDULAZIZ,** *of Kenya, is Professor and Chairman of the Department of Linguistics and African Languages at the University of Nairobi.*



***There are, it may be, so many kinds of voices in the world, and none of them is without signification. Therefore if I know not the meaning of the voice, I shall be unto him that speaketh a barbarian, and he that speaketh shall be a barbarian unto me.***

**I Corinthians, XIV, 10-11**

**Experts differ on the number of languages spoken in Nigeria, their estimates ranging from 368 to 513; Hausa, Ibo and Yoruba are the country's three majority languages. Photo Peter Larsen, Unesco.**

sal system of innate cognitive principles which, at the semantic level at least, underlies and gives form to all human language''

This view of modern linguistics has sealed the supremacy of the spoken language as a basis for all human communication. In fact, it is often not realized that only a small proportion of communicated human interaction, even in highly organized and industrialized societies, is in fact in written form.

Among the pre-literate societies throughout history, oral communication depended on social context. Oral behaviour was directly linked with the reality of social situations. Such factors as the value of an individual person's word, trust, reliability, were heavily constrained by social sanctions. In oral civilizatons no written document was required to prove ownership, to place responsibility, to define social obligation, or to apportion blame. The oral word was adequate since it was built, not on an abstract system of non-verbal behaviour, but on communicational value systems which could not be breached without far-reaching consequences to the individual.

Of course, there have been abuses even in such oral cultures, but there was no question of inadequacy of communicative efficiency or of divorcing communication from the contexts of human interaction. This is shown by the use of oral communication with its heavy dependence on personal references as opposed to the impersonal reference often associated with modern documents.

The historical approach views oral tradition and folklore as universal phenomena. In fact, the print medium itself came into being fairly recently, in the fifteenth century, with the first printed materials in the form of government gazettes. By the seventeenth century most of the printed communication materials were of the "Advertiser" type, for example, the Rotterdam and Manchester Advertisers. Of course, with the coming of copying machines and printing the whole structure of communication, especially at the popular level, completely changed.

In Africa most communication is still oral, because over seventy-five per cent of the people in most African countries live in traditional societies as members of ethnic groups, clans or extended families, in villages and homesteads. Most day to day transactions and interactions, be they economic, social or inter-group are conducted orally. There is no apparent inefficiency in such communication, unless interfered with by written elements of modernization imposed from the urban areas where centres of political power and administration are located. In fact, throughout the continent of Africa, one sees a vast oral communication network which is very efficient, in spite of the extensive and complex multilingual reality in existence. Most information is still transmitted by word of mouth.

Colonial rule in Africa has brought about a cultural and linguistic complexity with far-reaching psychological and sociological consequences. In almost all African countries that have attained independence, there exists unstable linguistic and cultural heterogeneity. In a small country like Cameroon there are over a hundred ethnolinguistic communities. Tanzania with twenty million people has over a hundred ethnolinguistic groups or tribes. This should, on the face of it, raise an acute problem of communication but, in fact, for centuries people from different ethnolinguistic backgrounds have been efficiently communicating using the oral medium, the basis being a sharing of common understanding, assumptions and presuppositions that are vital to an efficient communication system.

At another level, there is a diglossia situation in most countries where the metropolitan European language, English, French, Portuguese, Spanish or Afrikaans, fills the role of the official and national language. The local indigenous languages then are often reduced to a purely conversational role, except, of course, in countries like Tanzania, Somalia and Ethiopia where there are indigenous national/official languages, but with a European language still playing an important role in higher education and other areas of communication. Nevertheless, in Africa, after nearly a hundred years of westernization, most communication is still oral in form, making a vital contribution to group solidarity and identity and providing a basis for social, psychological and cultural life.

In some cases problems arise due to the existence of written codes of law, often in a foreign language, and manifesting value systems alien to the vast majority of the people. Injustices in the courts and the legal system in general can and do easily occur, when a defendant is forced to submit to a legal system he does not understand or appreciate. A situation of privilege and discrimination with respect to social and economic rights such as job opportunities and social mobility can also often arise, to the detriment of the so-called illiterate people. Illiteracy then simply means inability to express oneself in and understand the written word.

Oral communication in all societies, including the so-called developed ones, is relatively more flexible since it is dependent on the human context. Many ugly situations leading to misunderstandings and even wars could be defused if people met and exchanged views orally in a human

*Our own monuments are oral traditions which die along with the old men, conveyed by a multitude of languages which often do not intercommunicate. Our traditional authorities no longer have any responsibility or any means of expression. Our institutions are undergoing the aggressive irruption of modernity. We are in the world a fragile people.*

**Alioune Diop**

The late Wa Kamissoko, a famous Malian *griot* (story-teller, musician, entertainer). Photo © SCOA, Paris.

*I can still clearly remember the day when a car was first driven on to my father's estate. The labourers asked that the hood should be opened and that the hidden horse be taken out. This was not all that long ago. Yet no one today considers an interplanetary rocket to be that much of a sensation any more. Men sit at home, in slippers and dressing-gowns, to watch the astronauts walking about the moon and listen to their small talk. The world was replaced by worlds, and our small globe by the universe. We have to change and revalue our view of the world in accordance with this.*

**Albert Szent-Gyorgyi**

***The Orrery,*** **painting by Joseph Wright of Derby (an orrery is a mechanical model of the solar system). Photo © Derby Art Gallery, UK.**

context. Discrimination in education systems, even in the developed countries, can often be traced back to linguistic barriers that recognize only one variety of written standard language, which often coincides with the language of the educated élite of the middle and upper classes. High failure rates among working-class schoolchildren have been found to be due to a large extent to cultural and linguistic discontinuity between the home and school. In Third World countries such discrimination, especially where a foreign language is involved, can take on enormous proportions.

In Third World countries, many people still rely on oral communication as adult (and general) literacy campaigns have not had the impact originally expected. Indeed, in many parts of the world people still depend on oral tradition for day to day survival. Many family-planning programmes have failed in Africa because this was not fully understood by the authorities.

An example of this emerged from a door to door survey in a poor, working-class section of Nairobi aimed at finding out the effectiveness of a family-planning campaign. Free contraceptive pills and other aids had been distributed. It was found that one lady continued to produce children even though she and her husband had actually tried to practice birth control. When interviewed, the lady said she normally took her pills but when tired of doing so she would give them regularly to her husband

## *Can the oral tradition coexist with the written word?*

for a time, assuming that the result would be the same. On other occasions she would take a whole week's supply in two or three days. It was then discovered that the packet containing the contraceptive pills had been imported and that the instructions were in Swedish and English.

The 1960s and 1970s saw a great effort to promote functional literacy as a tool for improving communication that was considered vital to economic and social development. But the results have been disappointing in many areas. The conflict seems to be one of culture and tradition so far as the majority of the low income groups are concerned, and these, ironically, happen to be the target population.

When the idea of functional literacy was introduced in Africa, it was believed that it would serve as a panacea for underdevelopment in the rural areas and would lead to higher productivity, especially higher food production. Again, very little impact has been made. In some cases attempts to force people to join the world of literate society have been deliberately frustrated.

It is a pity that only in this century have scholars and others realized the importance of oral tradition as a source of knowledge of human history, culture, belief systems and other facets of oral civilization. Even in the Western world great artistic works must have been lost for ever because the oral tradition was not considered worthy of preservation. In Africa today, oral tradition forms an important source material for the interpretation of history. Oral stories and folklore provide vital linguistic clues to the state of the languages in a given area, their genetic classification and the form of linguistic change they have undergone, thus enriching the science of language.

Today, dances, rituals and other fruits of oral civilization are being revived as objects of serious study and research, and for entertainment purposes. Traditional medicine, for example, has been found to be of great value and of intrinsic interest to modern medicine, both for physical and for psychological and emotional therapy. There is now a worldwide appreciation of the value of the oral civilization and its destruction can be considered as nothing less than the deliberate spoliation of an irreplaceable element of the great human heritage.

■ **Mohamed Abdulaziz**

***In an organization whose objectives relate to such matters as education, science, and culture we must avoid systematic confrontations... What we need most is a constant willingness to engage in dialogue.***

**Amadou-Mahtar M'Bow**

**Detail from *Feeding the Hungry,* from the series *The Seven Works of Mercy,* by the Master of Alkmaar, 15th/16th century Dutch artist. Photo Dominique Roger, Unesco.**

# Communication—facts and figures

*THE changes now taking place and the likelihood of future upheaval in the field of communication and information are bringing new dimensions to thinking about communication and information as essential determinants of change in the lives of societies.*

*The means of storing data, sounds and images are being extended and improved with the aid of computer memories and video discs; processing and computation capacities are being very considerably increased with microprocessors; transmission capacities are being extended in space by way of communication satellites, and at the surface of the earth or under the sea with the use of microwaves or optical fibres; and data collecting is acquiring new dimensions with the help of remote-sensing techniques. The association of computer technologies and communication technologies is giving rise to the establishment and interconnexion of complex networks enabling information to be processed and transmitted instantaneously, in real time.*

*These technologies are playing a part in transforming societies and causing them to move towards ever greater complexity. Communication and information may in fact be regarded as the nervous system of contemporary societies: they are essential to their activities, particularly in economic matters, and play an essential part in financial transactions and banking and in the development of trade, of land, sea and air transport, of health or public administration systems, and of military systems.*

*Communication and information industries are in some countries acquiring such economic importance that they are tending to become predominant and to take over from heavy industry and manufacturing as the chief component of the national product. Some people consequently consider that tomorrow's economy will be based mainly on information, and that information is in the process of becoming the key resource marked out for a major role still more decisive than that of raw materials and energy.*

*The impact of communication and information on education is also emerging more clearly. As we know, it is quite common for children in some countries to receive information put out by the audio-visual media during periods as long as, if not longer than, the time spent in the classroom. The school, as a means of transmitting knowledge, thus finds itself in a context very different from that obtaining in the past, for it is now faced with the need to provide a kind of "neo-literacy" instruction by instilling the ability to select messages, to interpret them critically and to classify discontinuous and heterogeneous flows of information into organized and coherent bodies of knowledge.*

*In addition, the new technologies have given rise to the production of a great many educational materials designed to extend the effects of instruction. Their use and the possible benefits resulting therefrom in terms of time and manpower savings and increased effectiveness, together with the role of the computer as a medium and a subject of instruction, are central themes for reflection on the future prospects of educational methods and programmes.*

*Scientific and technological development is also influenced to a great extent by the existence of more and better means of communication and information. This may be a matter of research and computing capacity and the circulation and use of scientific and technical information intended for specialists and passing on the store of acquired knowledge, or of efforts to make the general public more aware of science and technology and the development of a scientific and technological culture.*

*Resulting from the convergence of various interrelated and interacting technologies, the world of communication and information can be seen as a shifting, complex and as it were ubiquitous entity. This makes the very great disparities in the different countries' situations as regards their communication and information capacity all the more serious. The least well equipped countries, especially the developing countries, are deprived of some of the most effective means of controlling the various aspects of the development process.*

*The development of communication and information in the developing countries, which is generally recognized to be necessary by the international community today, is therefore a prime prerequisite for the advent of a world of greater equity and solidarity and for the free development of democracy within the various societies. If they were better able to communicate and to acquire and impart information, the developing countries could not only make their voices heard more effectively in international affairs but could also make more progress in education—particularly in the struggle against illiteracy—and could develop their scientific and technological potential, improve their health systems, promote rural development, and be in a better position to deal with natural disasters. Communication and information can also help those countries, and indeed all others, to consolidate national unity, preserve their cultural identity, and make provision for greater participation by the public in the changes currently taking place.*

*With the continuous advancement of knowledge, information is steadily growing in volume and variety, and all societies anxious to make progress are faced with the need to operate systems for the storing, processing and dissemination of specialized information, including scientific and technical information. Information systems and services are being developed mainly in the industrialized countries, and some of them hold a privileged position, in some cases a monopoly, in regard both to content, most often derived from studies and research carried out in those countries, and to technical facilities for storage and distribution.*

*Many countries have to overcome a variety of technical obstacles and financial constraints in order to gain access to information. The compelling requirement is for freer and more effective access to more relevant information. Information should be able to flow freely, and every country should be able to avail itself of data helpful for its development. It is therefore imperative, on the one hand, to ensure the compatibility and interconnexion of information systems throughout the world and, on the other, to foster the development, in all countries and at the regional level, of infrastructures, networks and data banks which will make it possible to handle all the information needed for scientific, technological, economic, social or cultural activities, and lastly to create the necessary conditions for freer access to the information needed for the progress of the various peoples.*

*The new communication and information technologies represent a huge potential and are opening up unsuspected possibilities for all countries, and more especially the developing countries. Any countries that are unable to avail themselves amply of these technologies are in danger of finding themselves on the fringe in relation to the rest of the world, and their populations in danger of being cut off from the mainstream of political, economic and cultural life.* ■

*The second half of the twentieth century has been marked by the expansion of the mass media and the audience available to them.*

| Increase 1950-1975 | Percentage |
|---|---|
| Press (Number of copies, daily newspapers) | + 77 |
| Radio (Number of receivers) | + 417 |
| Television (Number of receivers) | + 3 235 |
| Books (Number of titles per year) | + 111 |

*Unesco Statistical Yearbook*, 1977.

| Media audience increase 1960-1975 | Percentage |
|---|---|
| Total world population | + 33 |
| Daily newspapers (circulation per thousand inhabitants) | + 5 |
| Radio receivers (number per thousand inhabitants) | + 95 |
| Television receivers (number per thousand inhabitants) | + 185 |
| Book titles (published annually per million inhabitants) | + 30 |

*Unesco Statistical Yearbook*, 1981.

***Press agencies** are the major source of information to newspapers and to broadcasters, particularly for foreign news. More than a hundred countries now have their own national news agencies.*

*Among the news agencies there are five—Agence France-Presse (France), Associated Press (USA), Reuters (UK), Tass (USSR) and United Press International (USA)—which have a particularly wide international role due to the size and technological strength of their systems of collecting news and distributing it in many languages all over the world. Each has offices in more than a hundred countries, and employs thousands of full-time staff and part-time correspondents. They collect hundreds of thousands of words a day and, domestic distribution included, transmit millions of words. Each issues news twenty-four hours a day to thousands of national agencies, subscribing newspapers, radio and television organizations in over a hundred countries. All have regular services, usually daily, in Arabic, English, French, German, Portuguese, Russian and Spanish; some also provide their service in other languages.*

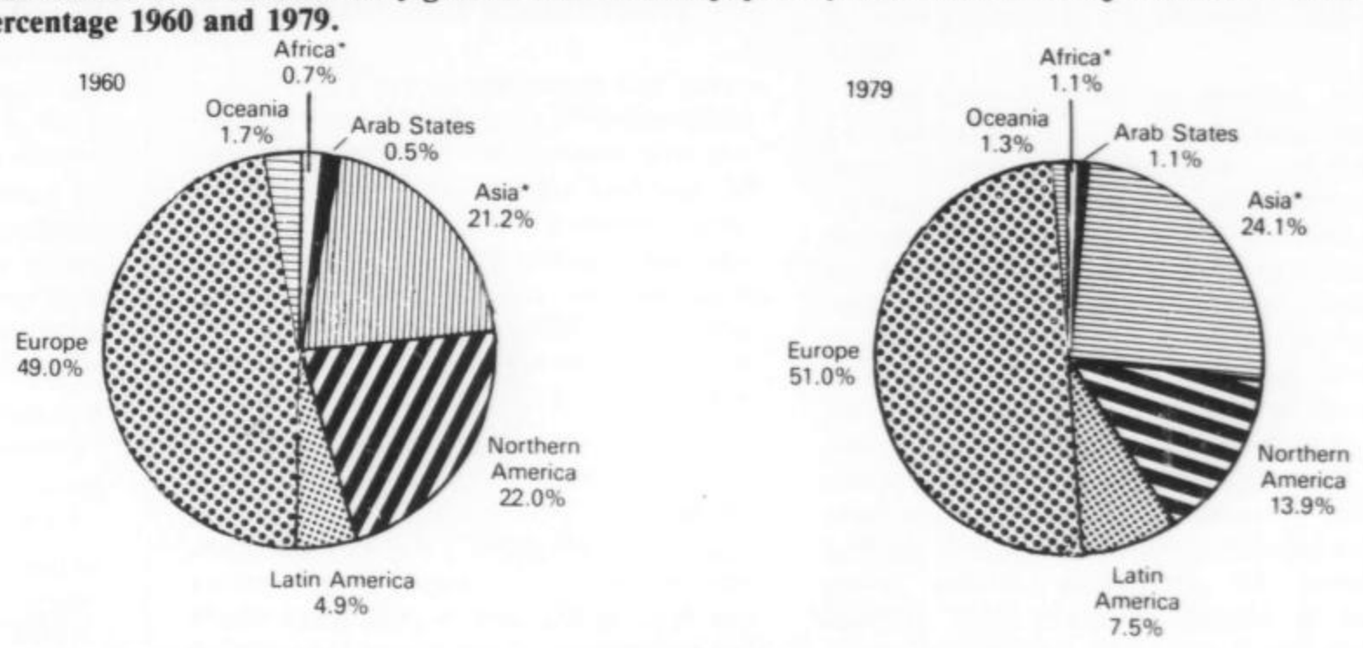
***Daily Newspapers.** Although circulation has grown constantly, the worldwide total of daily newspapers has remained fairly static for a number of years, due to mergers, the disappearance of small local newspapers and competition from radio and television.*

***Books.** This century has seen a great and still accelerating increase in book production, which can be ascribed to the growth in the absolute number of literates, advances in education, the arrival of paperbacks, improvements in production and distribution techniques, and the spread of libraries and travelling libraries even to remote places. Between 1955 and 1975, world book production more than doubled, taking the number of titles published annually, and tripled in the number of copies printed.* ▶

**Distribution of national news agencies**

| Africa | Arab World | Asia | Europe | Latin America | North America | Oceania |
|---|---|---|---|---|---|---|
| 26 | 18 | 19 | 28 | 11 | 3 | 2 |

**Distribution of circulation daily general interest newspapers by continents and major areas: estimated percentage 1960 and 1979.**



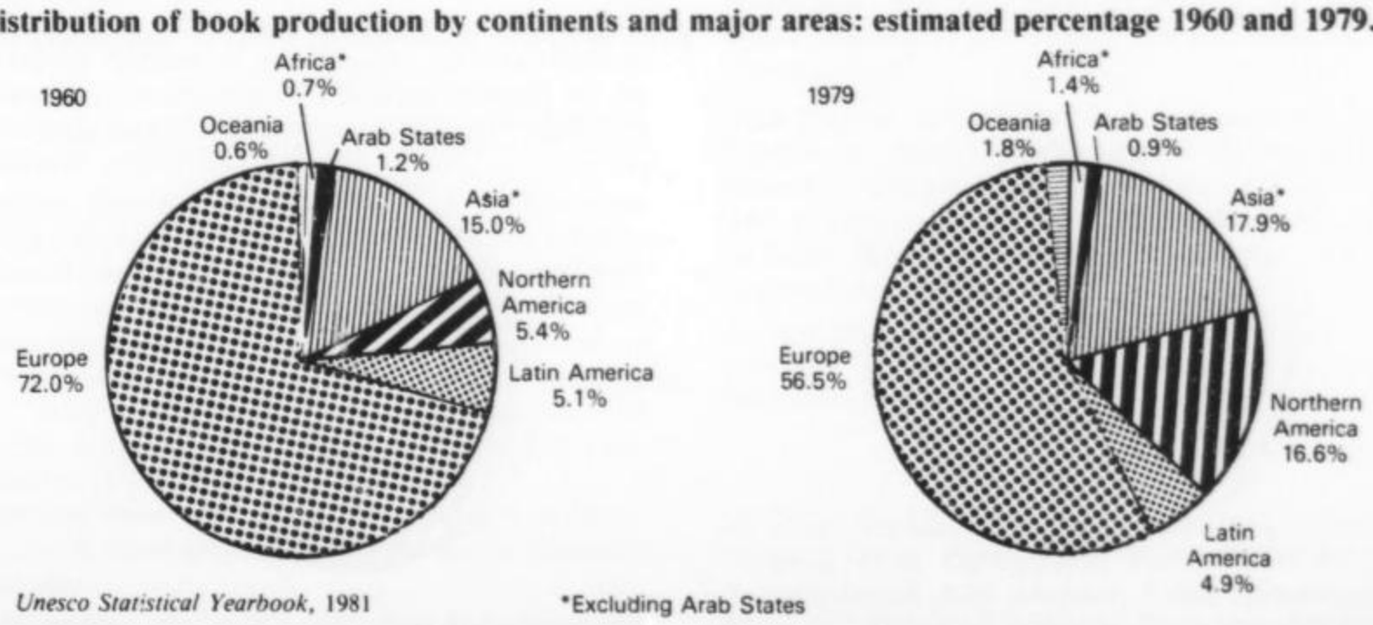

*Unesco Statistical Yearbook*, 1981 *Excluding Arab States

**Number of book titles published**

| Continents, major areas, and groups of countries | 1955 | 1960 | 1965 | 1970 | 1975 | 1979 |
|---|---|---|---|---|---|---|
| World total | 269 000 | 332 000 | 426 000 | 521 000 | 568 000 | 689 000 |
| Africa | 3 000 | 5 000 | 7 000 | 8 000 | 11 000 | 12 000 |
| America | 25 000 | 35 000 | 77 000 | 105 000 | 121 000 | 145 000 |
| Asia | 54 000 | 51 000 | 61 000 | 75 000 | 88 000 | 139 000 |
| Europe (including USSR) | 186 000 | 239 000 | 260 000 | 317 000 | 343 000 | 381 000 |
| Oceania | 1 000 | 2 000 | 5 000 | 7 000 | 5 000 | 12 000 |
| Developed countries | 225 000 | 285 000 | 366 000 | 451 000 | 480 000 | 558 000 |
| Developing countries | 44 000 | 47 000 | 60 000 | 70 000 | 88 000 | 131 000 |
| Africa (excluding Arab States) | 1 600 | 2 400 | 4 300 | 4 600 | 8 300 | 9 200 |
| Asia (excluding Arab States) | 53 200 | 49 900 | 59 700 | 73 700 | 85 800 | 135 500 |
| Arab States | 2 200 | 3 700 | 4 000 | 4 700 | 4 900 | 6 300 |
| Northern America | 14 000 | 18 000 | 58 000 | 83 000 | 92 000 | 112 000 |
| Latin America | 11 000 | 17 000 | 19 000 | 22 000 | 29 000 | 33 000 |

*Unesco Statistical Yearbook*, 1981.

**Distribution of book production by continents and major areas: estimated percentage 1960 and 1979.**




*Unesco Statistical Yearbook*, 1981 *Excluding Arab States

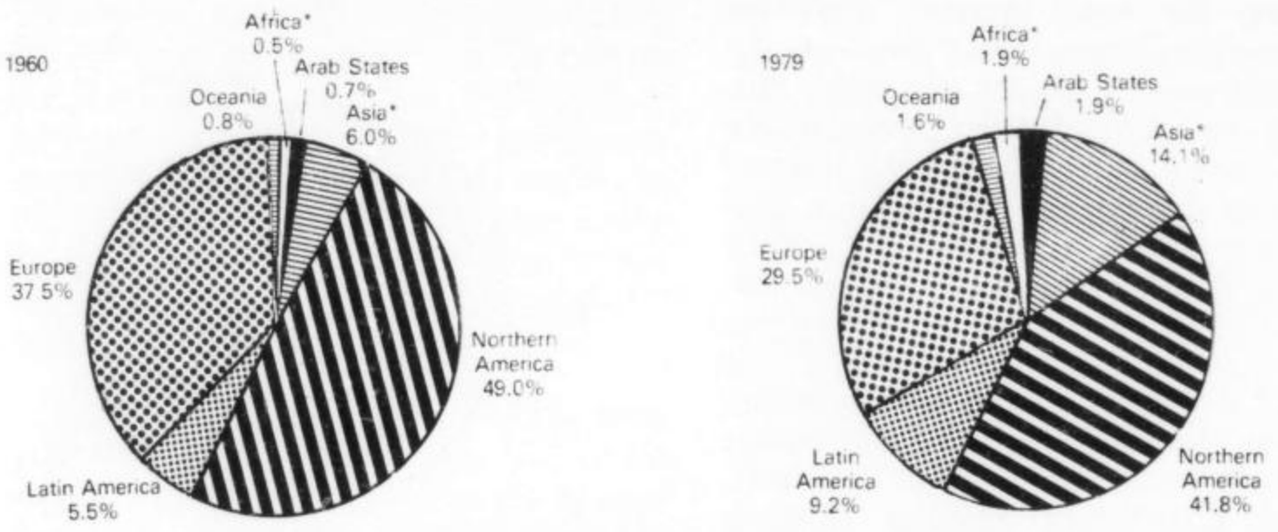
***Radio.*** *Radio is the most ubiquitous of the mass media. Latest available estimates indicate that there are well over one thousand million radio receivers in use around the world, i.e. approximately one for every four people on earth.*

**Number of radio receivers and receivers per 1,000 inhabitants**

| Continents, Major areas and Groups of countries | Number of radio receivers Total (millions) | | | | Per 1,000 inhabitants | | | |
|---|---|---|---|---|---|---|---|---|
| | 1965 | 1970 | 1975 | 1979 | 1965 | 1970 | 1975 | 1979 |
| World total | 524 | 672 | 931 | 1 140 | 207 | 241 | 303 | 336 |
| Africa | 10 | 16 | 28 | 35 | 33 | 45 | 70 | 77 |
| America | 285 | 357 | 505 | 581 | 619 | 701 | 900 | 964 |
| Asia | 42 | 58 | 108 | 169 | 39 | 48 | 80 | 108 |
| Europe (including USSR) | 184 | 233 | 277 | 335 | 273 | 341 | 380 | 450 |
| Oceania | 3 | 8 | 13 | 19 | 189 | 428 | 606 | 863 |
| Developed countries | 460 | 572 | 770 | 924 | 449 | 533 | 687 | 801 |
| Developing countries | 64 | 100 | 161 | 216 | 42 | 58 | 83 | 97 |
| Africa (excluding Arab States) | 6 | 8 | 17 | 22 | 24 | 31 | 55 | 63 |
| Asia (excluding Arab States) | 40 | 56 | 102 | 161 | 39 | 48 | 77 | 106 |
| Arab States | 6 | 10 | 17 | 22 | 59 | 83 | 120 | 144 |
| Northern America | 251 | 306 | 424 | 476 | 1 173 | 1 353 | 1 793 | 1 951 |
| Latin America | 34 | 51 | 81 | 105 | 138 | 180 | 249 | 252 |

*Unesco Statistical Yearbook*, 1981.
Data for: World total, Asia, Developing countries and Asia (excluding Arab States) do not include China

**Distribution of radio receivers by continents and major areas: estimated percentage 1960 and 1979.**




*Unesco Statistical Yearbook*, 1981 *Excluding Arab States

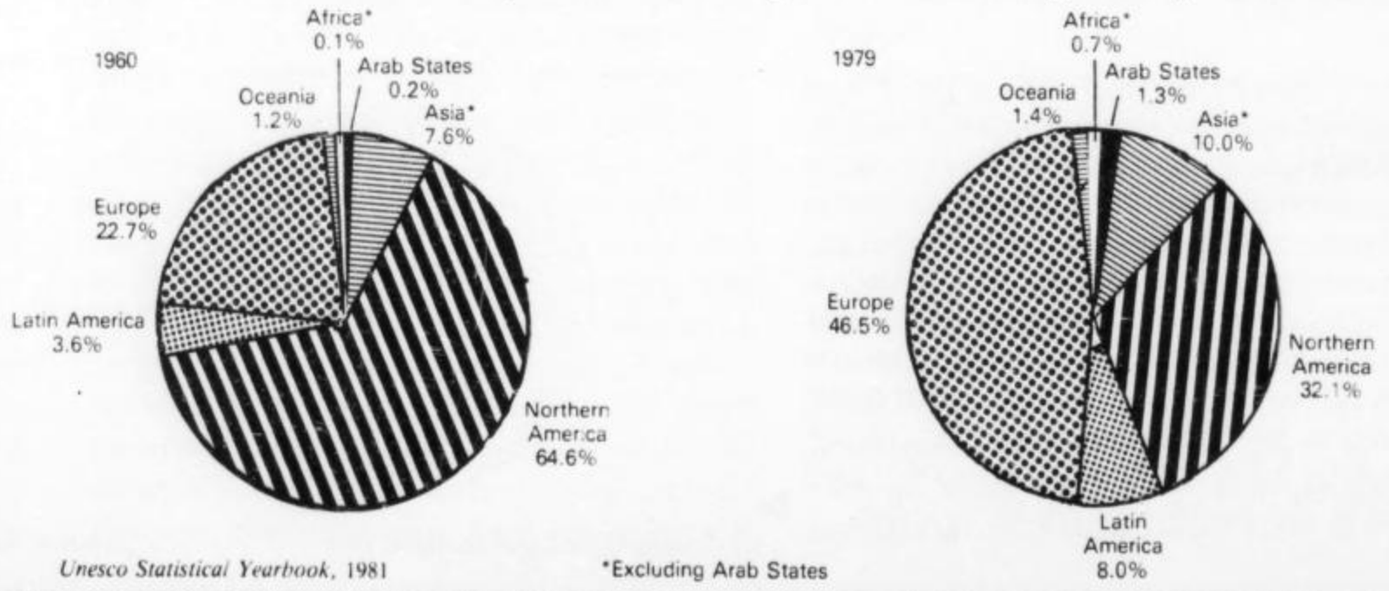
***Television.*** *The age of television dawned in 1936 when France and the United Kingdom began regular transmission of programmes. By 1950, five countries had a regular TV service and by 1955 the number was 17. This figure had increased fourfold by 1960. A decade later, more than 100 countries were transmitting television programmes.*

**Number of television receivers and receivers per 1,000 inhabitants**

| Continents, Major areas and groups of countries | Number of television receivers Total (millions) | | | | Per 1,000 inhabitants | | | |
|---|---|---|---|---|---|---|---|---|
| | 1965 | 1970 | 1975 | 1979 | 1965 | 1970 | 1975 | 1979 |
| World total | 181 | 266 | 374 | 471 | 72 | 96 | 122 | 139 |
| Africa | 0.6 | 1.2 | 2.5 | 6.7 | 1.9 | 3.4 | 6.2 | 15 |
| America | 84 | 109 | 160 | 188 | 182 | 214 | 285 | 311 |
| Asia | 19 | 27 | 37 | 50 | 18 | 22 | 27 | 32 |
| Europe (including USSR) | 75 | 125 | 169 | 219 | 132 | 196 | 241 | 294 |
| Oceania | 2.4 | 3.5 | 5.5 | 6.5 | 137 | 200 | 258 | 295 |
| Developed countries | 170 | 244 | 334 | 407 | 166 | 227 | 298 | 353 |
| Developing countries | 11 | 22 | 40 | 64 | 7.3 | 13 | 21 | 29 |
| Africa (excluding Arab States) | 0.1 | 0.3 | 0.6 | 3.3 | 0.4 | 1.1 | 2.0 | 9.4 |
| Asia (excluding Arab States) | 19 | 26 | 36 | 47 | 18 | 22 | 27 | 31 |
| Arab States | 0.9 | 1.9 | 3.4 | 6.4 | 8.4 | 15 | 24 | 42 |
| Northern America | 76 | 92 | 133 | 151 | 355 | 407 | 562 | 619 |
| Latin America | 8 | 17 | 27 | 37 | 32 | 60 | 83 | 103 |

*Unesco Statistical Yearbook*, 1981
*Data for: World total, Asia, Developing countries, and Asia (excluding Arab States) do not include China.*

**Distribution of television receivers by continents and major areas: estimated percentage 1960 and 1979.**




*Unesco Statistical Yearbook*, 1981 *Excluding Arab States

# Nobel laureates speak out

## *Jean Dausset*

ERADICATION of contempt for others and the teaching of the vital importance of the differences that exist between men are unquestionably among the great imperatives of our time, indeed of all time.

It so happened that the day on which I heard that I had been awarded the Nobel Prize was Mutual Tolerance Day. I was struck by this coincidence because at the same time that I had been explaining to journalists the advantages of biological diversity I had also been stressing the benefits of cultural diversity.

Variations between individuals are essential if a species is to be able to adapt to modifications in its environment and to perpetuate itself despite the various hazards to which it is subject. Thanks to even a very subtle biological difference, one individual will survive an epidemic to which another will succumb. Now, with the exception of identical twins, no two individuals are, or ever will be, exactly the same. Each human being is unique.

The future of our species, its ability to adapt and to evolve biologically is dependent upon the careful preservation of this diversity. Uniformity would lead to decline, degeneracy and death. The notion of a "pure race" is thus biological nonsense. In the same way, the cultural evolution of humanity depends upon jealous preservation of the intellectual diversity of individuals and ethnic groups. This diversity has enabled mankind to adapt to the most varied and harshest conditicns and it will enable humanity to adapt to new structures, especially to the new social and economic structures imposed by modern technology.

Freedom of thought and opinion, freedom of religious practice, are simply the expression of individual diversity. They are the leaven of ferment of a humanity ever on the march. Here too uniformity would be equivalent to death.

I am not too happy with the word "tolerance" because it has the connotation of a kind of rejection only overcome with difficulty, with a rather grudging resignation. The differences we see in others should not be simply tolerated, they should be accepted, encouraged and cultivated in full knowledge of the inestimable riches they offer. ■

*Professor Jean Dausset, of the University of Paris, was awarded the 1980 Nobel Prize for Physiology and Medicine for work on genetically determined structures on the cell surface which regulate immonological reactions.*

## *Pyotr Kapitsa*

TODAY's world problems confront science with a set of new challenges, the most important of which are:

- the study of "qualitative" changes in the population and their relations with the social structure;
- the safe use of nuclear power as a basic energy source and above all the development of controlled thermonuclear fusion;
- the devising of closed cycles, especially in the field of agrotechnology;
- the study of the earth's heat balance and of environmental pollution.

We only have a limited time, perhaps a century, to solve all these problems which exist on a planetary scale.

A State's participation in the solution of world problems is dependent on the nature of its society and on the ideology which is the bedrock of its political life. At the present time, eminent economists believe that only the socialist States will be in a position to take action, for the undertaking is one that calls for very strict control of the country's economy.

Thus appropriate scientific research is today urgently needed. It must be carried out before the crisis comes to a head. The best minds must take part in this effort and accordingly they must be organized on an international scale and be provided with the facilities they need.

It is well known that under the present organization of production scarcely one third of the population of the developed countries is involved in activities of vital importance to the country as a whole. The lion's share of surplus productive forces is essentially devoted to military spending and to the maintenance of armed forces which do not participate in productive work. For all these countries, in short, military spending is much higher than the research budget. It would seem reasonable to channel a part of these resources, however small, and above all the intellectual potential engaged in the preparation of military programmes, to the organization of scientific research for the solution of world problems. This would not have any repercussions on the budget and would not cause an increase in unemployment since employment in industry would be maintained, simply being directed to different objectives.

At a time of growing international co-operation it is to be hoped that such measures will be taken and that reason will win the day. But for this to come about, the problems must be formulated clearly and convincingly and be the object of wide public debate. It is up to the scientists to shoulder this task for they have an authority which enables them to envisage the possibility of solving major world problems in a way that will benefit humanity as a whole. Hence scientists should not keep social problems at arm's length; they must be aware of the close connexion between these problems and scientific activity. ■

*Academician Pyotr Kapitsa, of the Institute for Physical Problems of the USSR Academy of Sciences, Moscow, was awarded the 1978 Nobel Prize for Physics for basic inventions and discoveries in low-temperature physics.*

# Asian writers and cultural identity

*An Asian Writers Forum, organised, by Unesco with the collaboration of the Asian Federation of Unesco Clubs and Associations, was held in Tokyo and Kyoto from 11 to 18 April 1982. The theme of the Forum, which was attended by eleven leading writers from nine countries, was "Cultural Identity: an Asian Viewpoint and Perspective." The work of the meeting, the first of its kind, concluded with the unanimous adoption of the following Declaration, which reflects the consensus reached by these writers from widely different backgrounds.*

**We, eleven writers from nine countries of Asia assembled in Tokyo and Kyoto, Japan, from 12 to 16 April, 1982, in the Asian Writers Forum sponsored by Unesco and the Asian Federation of Unesco Clubs and Associations,**

***recognize*** **that Cultural Identity is a dynamic process, not "being" but "becoming"; that it is in evolution, since everything is under constant change. The traditional wisdom is re-discovered and breathes new life into the process of cultural evolution;**

***hold*** **that the cultural identity of any nation or community must be inclusive of the culture of the silent and the voiceless and especially of the minorities, which is expressed not only through the verbal but also oral, visual and performing manifestations;**

***agree*** **that the authentic writer is essentially revolutionary, not necessarily in the political sense, but in the sense that he moves ahead of his time;**

***are aware*** **of the challenges of modernism and recognize that technology is a component of culture; the development of science and technology, therefore, should be based on respective indigenous cultures. Education, whether formal or non-formal, in this context, plays a crucial role. Education should be so structured as to reconcile scientific attitudes with cultural sensitivity:**

***believe*** **that Asia could make a distinctive contribution to world culture through the widely-shared concept of man ideally in harmony with nature and the community, where all existence assumes co-existence, where man is defined as "we" rather than "I", where substance of being is "relation" as manifested in various ways in Asian languages; and through its original concepts of Time and Space;**

***confirm*** **that every language has a right to dignity, for it is the articulation of the world view of a people;**

***affirm*** **that the world of today and tomorrow should be enriched and made secure through acceptance of cultural plurality and through constant dialogue between cultures emphasizing their unity in diversity;**

***note*** **that Japan, the host of this Forum, provides an example of assimilation of various cultural trends throughout its history while preserving its identity which is simultaneously permanent and dynamic;**

***appreciate*** **that this kind of Forum has been organized for the first time under the auspices of Unesco; and**

***urge*** **Unesco and all National Commissions for Unesco of Asian Member States vigorously to promote cultural exchange and to take special and urgent steps to encourage, support and sponsor direct translations from one Asian language to another;**

***declare*** **that, as writers, we shall do our best to promote dialogue and mutual understanding between all nations.**

*Kyoto, 17 April, 1982*

***Ai Qing, Mohammad Ajmal Makhdum, Ashok Vajpeyi, Vasit Dejkunjorn, Faiz Ahmed Faiz, Yasushi Inoue, Nick Joaquin, Takeo Kuwabara, Phan Tu, Titie Said Sadikun, Harischandra Wijetunga.***

# Letters to the Editor

## EVOLUTION FROM SPACE

Sir,

For over twelve years I have been a subscriber to your magazine which has taught me many things about a wide variety of subjects.

I thought your May 1982 issue on Darwin was particularly interesting, especially the article by Chandra Wickramasinghe, "An Astronomer Reflects: Was Darwin Wrong?" Could you tell me whether the two books mentioned in his biographical note, *Space Travellers: the bringers of life* and *Evolution from Space,* have been translated into French?

**Odette Valle**
**Paris, France**

Sir,

I found the article in the May 1982 issue of the *Unesco Courier* by Chandra Wickramasinghe extremely interesting. However, I have tried everywhere without success to find the books he has written: *Space Travellers: the bringers of life* and *Evolution from Space.* Can you please let me know where I can obtain these books?

**F. Robin**
**Fontenay-sous-Bois, France**

*Our May issue on Darwin, and Professor Wickramasinghe's article in particular, seems to have aroused great interest among many of our readers. Unfortunately, none of Professor Wickramasinghe's books (written in conjunction with Sir Fred Hoyle) has yet been translated, although a Japanese version of* Space Travellers *is now in preparation. They are obtainable in English as follows:* Lifecloud: the origins of life in the universe *(1978), price £6.95,* Diseases from Space *(1979) price £6.95, and* Evolution from Space *(1981), price £7.95, available from J.M. Dent and Sons Ltd., 33, Welbeck Street, London, WIM 8LX;* Space Travellers: the bringers of life *(1981) price £8.95, available from University College of Cardiff Press, P.O. Box 78, Cardiff, CF1 1XL. Money should be sent with orders adding ten per cent for postage* — **Editor.**

## SACRED EFFIGY OR POTTER'S MOULD?

Sir,

On page 2 of the January issue of the *Unesco Courier* you published a very fine photograph of a "Mayan mushroom-stone" with a caption that implied that this type of mushroom was known to be hallucinogenic.

I would just like to point out that it is deplorable that an affirmation, unsupported by a single serious archaeological finding, should be very widely accepted whereas a hypothesis which, as research stands at present, offers more solid guarantees of being correct is almost totally ignored.

As far as I know, the only really scientifically thought out theory, based on solid facts and without serious contradictions, is that put forward by Ulrich Köhler in *American Antiquity,* Volume 41, No. 2 of April 1976, in which he states that the pre-Columbian mushroom stones are potter's moulds.

Without going deeply into Köhler's argument, I should like to bring out one or two salient points.

Is there even the slightest proof that a sacred mushroom cult ever existed? No. For the Indians, hallucinogenic mushrooms were (and still are) a *means* of divination; there is nothing to indicate that the mushrooms themselves were ever regarded as divine. The absence of any form of veneration of the mushrooms used in the divination rituals clearly runs counter to any attempt to class mushroom-stones as idols, since the creation of effigies logically presupposes that the effigies concerned would be treated with at least a certain minimum of veneration.

**Henri Broch**
**University of Nice, France**

*In his latest book* Aux Sources du Futur *Unesco's Director-General, Mr. Amadou-Mahtar M'Bow, provides a synthesis of today's major world problems: the arms race, hunger which afflicts millions of human beings, the impact of certain human activities on the natural environment. While stressing that these are global challenges which may threaten the very existence of humanity, he does not overlook the repeated breaches of human rights and the liberty of peoples, the persistent inequalities between individuals and between societies, and the marked injustices which characterize certain aspects of international relations.*

*But as the title indicates, Mr. M'Bow does more than simply isolate these fundamental problems and others such as those posed by new developments in science and technology, communication between men and between cultures, education and cultural identity. Turning to the future, he also outlines solutions, suggests an order of priorities, and, finally, proposes for the Organization he leads, in accordance with the goals set out in its Constitution, a number of tasks for the years 1985-1989. The author points out that, in keeping with its mission, Unesco is at one and the same time an "observatory" and a "think tank". It should break new ground in the eradication of illiteracy, the democratization of education and the media, the free flow of knowledge and know-how, the advancement of science, the storage of information, and the renewal of values for the advancement of the cause of peace and human rights.*

*In a world in which selfish interests too often obscure the general interest of humanity and in which many specialists cultivate their own garden without concern for their neighbours, this clear-sighted, panoramic and timely work deserves to be read by all who are anxious about the direction in which humanity is moving today.* ■

* To be published in English later this year; provisional title: *Where the Future Begins.*

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*All correspondence should be addressed to the Editor-in-Chief in Paris.*

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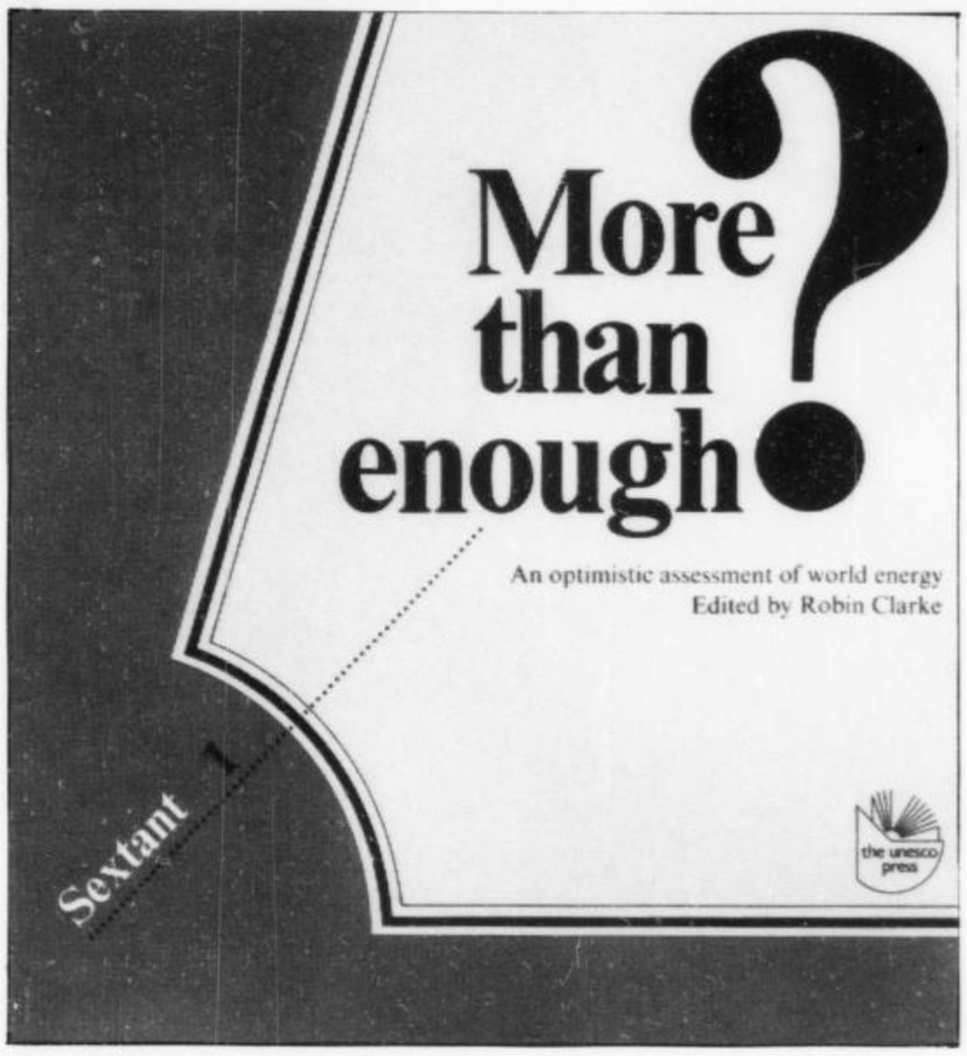


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